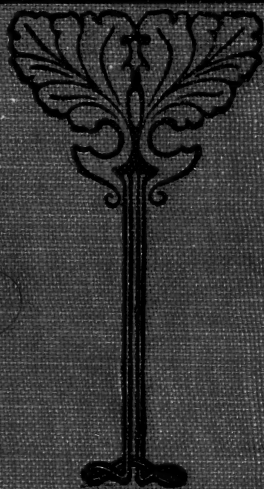


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# HOW TO GROW

FLOWERS, FRUITS,  
VEGETABLES, ETC.



By  
CHARLES H. TRITSCHLER  
W. D. BUCHANAN

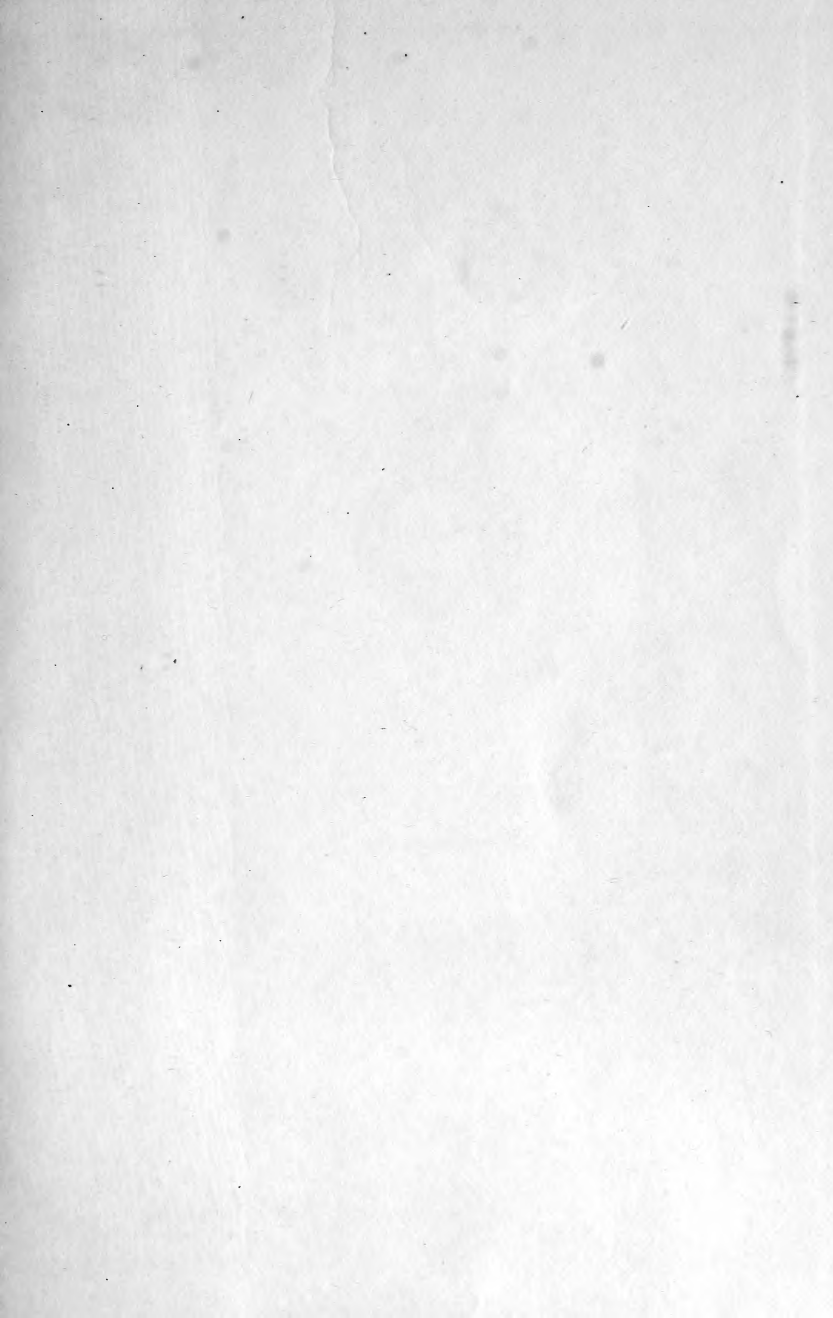


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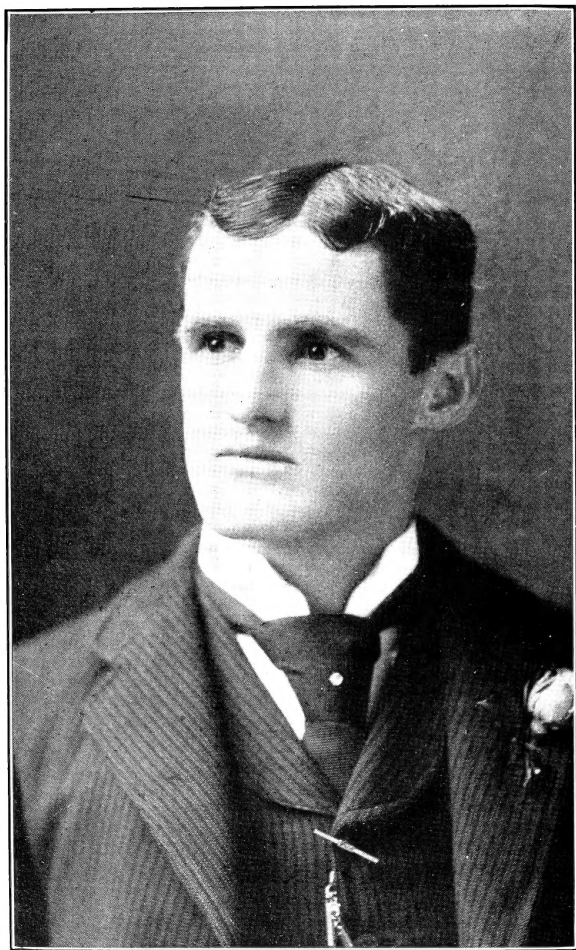
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CHARLES H. TRITSCHLER.

*A Practical Treatise of*

# HOW TO GROW

FLOWERS, FRUITS, VEGETABLES,  
SHRUBBERY, EVERGREENS,  
SHADE TREES, ORNA-  
MENTAL TREES

PLANT PESTS, DISEASES AND  
REMEDIES

By

CHARLES H. TRITSCHLER  
and W. D. BUCHANAN

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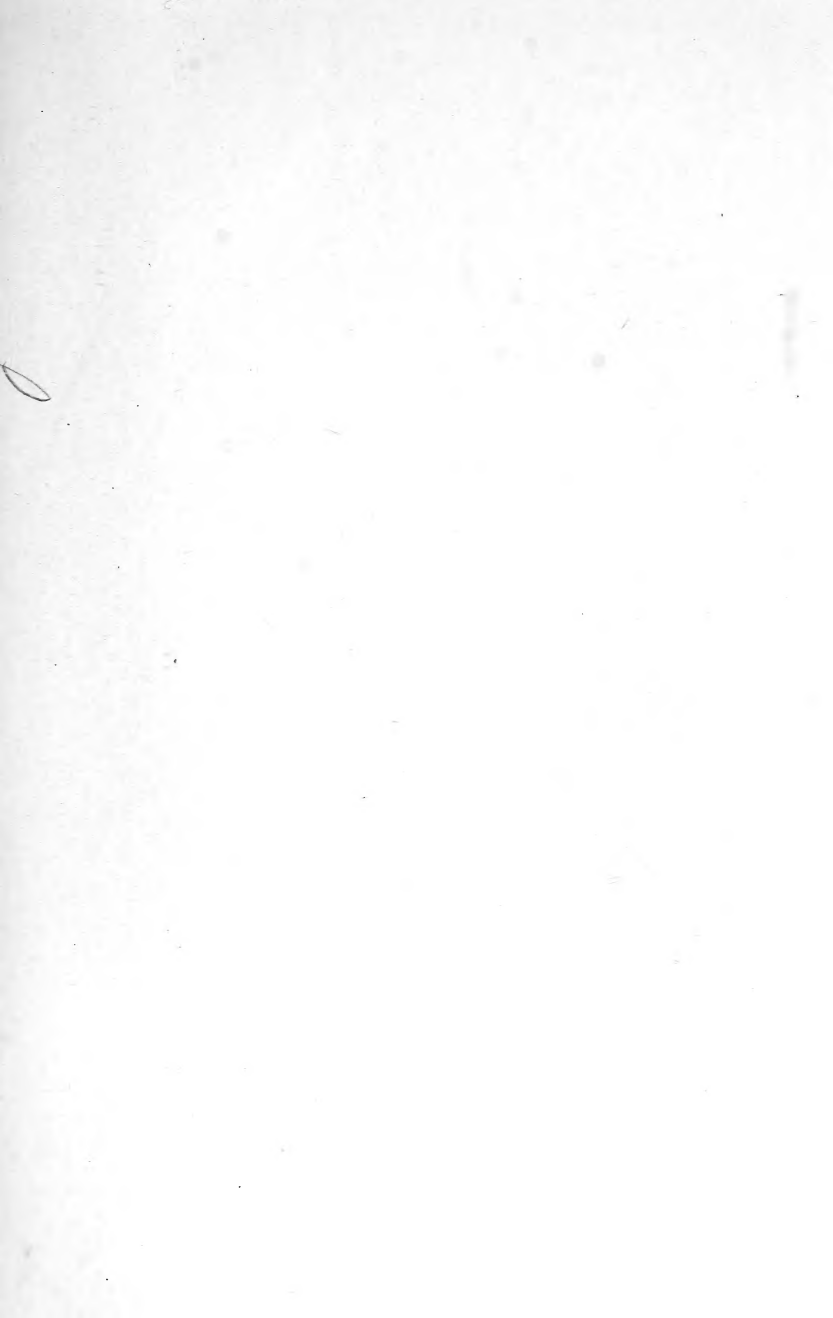
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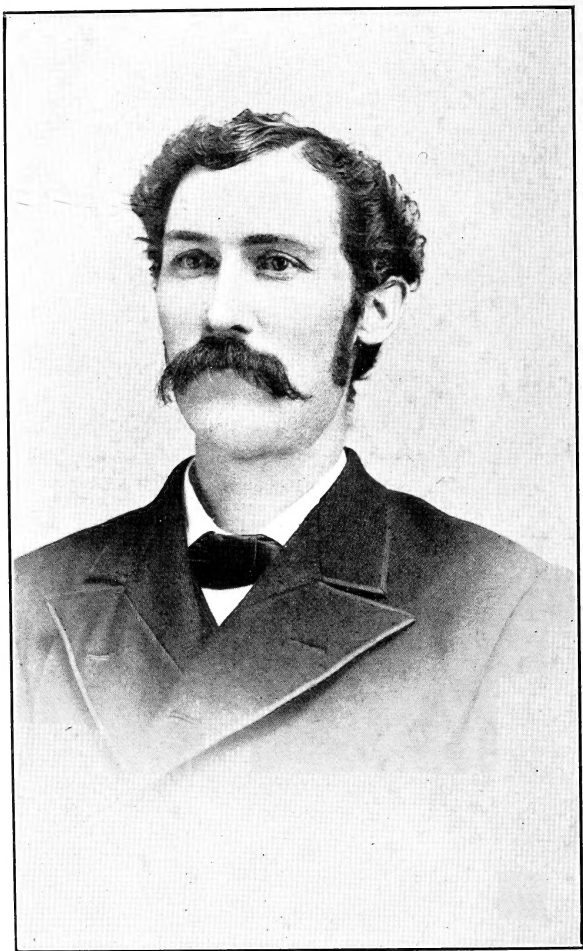
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MCQUIDDY PRINTING COMPANY  
1910

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BY  
CHARLES H. TRITSCHLER  
AND W. D. BUCHANAN





W. D. BUCHANAN.

## INTRODUCTORY.

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It is our intention in introducing this book to the amateur to give him as concise a knowledge of growing plants as we possibly can in a brief description of each subject embraced. Our purpose is to compress the work as much as is consistent with the subject in hand.

At the earnest request of a number of friends and with a knowledge of the requirements of the many who would like to cultivate the oftentimes small body of land lying idle on the premises, but do not possess sufficient knowledge of seed and plant management to put their desires into execution, therefore we have decided to place before the amateur a comprehensive treatise on vegetable gardening, floriculture, and the planting and care of fruit and shade trees, shrubbery, evergreens, and vines.

This is not an encyclopedia of plants arranged for the perusal of the botanist, nor a study of agriculture, floriculture, pomology, or arboriculture, but just a simple, comprehensive, plain talk about how to successfully grow seeds and plants, requiring only close observation to make a success and to find that you have chosen one of the most interesting subjects on earth.

Each subject will be introduced in its proper season, commencing with autumn preparation and planting on through winter, spring, and summer. On a well-kept place, be it farm, garden, orchard, or vineyard, there is some work to be done in nearly every month of the year, especially in the orchard and vineyard. Trees, shrubbery, and vines can be better worked over in winter for trimming into better shape, removing suckers and surplus wood, and trimming of vines and the destruction of insect pests.

It is with much concern and feeling highly complimented that we are requested to assume the rôle of instructors, as the subjects to be treated are so numerous and varied; but we hope to make each subject so simple to the reader that the busy man will comprehend at once and be able to easily follow the instructions.

This work is not intended for the use of the professional, with his many acres and much expanse of glass, but for the novice, the busy man in the city, with his little fifty-foot square of many small beds filled with a great variety of the vegetable kingdom of which he would like to become better acquainted in their habits of growth and the proper treatment thereof; the man in the suburban home, with several acres on which he delights to spend his few leisure hours each day in the dewy morn or in the cool of the evening, when he has laid aside dull care for the day and proceeds to recreate.

After over forty years of varied experience in floriculture, we feel that we are able to assist the novice in his or her efforts to grow flowers to as near perfection as is possible with one who has not had previous experience. With close attention to detail in this work, there should be little difficulty with the very first attempt.

It is our intention to make this book fulfill the requirements of the amateur and inexperienced florist. To do this, we have to give instructions on some subjects more in detail than will seem necessary to the experienced florist; but it must be understood that this book is not for those who have been following the business as a profession, but is for the amateur who takes pleasure in the work of his own garden. We flatter ourselves that this book will be welcomed, filling a want that no work printed in this country has attempted to supply.

CHARLES H. TRITSCHLER.  
W. D. BUCHANAN.



# FLOWERS.

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## LOCATION AND SOIL.

When choice can be had, always lay the flower garden out with a southern or southeastern inclination; and if there is good shelter on the north and west sides, such as timber or hills, to keep off the cold winds, many plants can be grown that could not otherwise be cultivated without such shelter. In such a situation, work can be started earlier in the spring and carried on later in the autumn, making the seasons ten to fifteen days longer at each end.

The soil in the flower garden is of as much importance as in the vegetable garden. Nearly all flowering plants do best in a deep, rich soil; but there are a number of our best flowering and decorative plants that do well in poor land.

It is our aim to avoid tedious reading and to compress this book as much as possible consistent with the work in hand.

## PROPAGATION BY SEEDS.

Instruction can be given only to a certain extent in the propagation of plants from seed. Long experience is required to gain the knowledge for a full understanding of the proper temperature and moisture required for the germination of different varieties.

A very good rule is to sow seed of hardy plants very early in the spring—about the first of March—and seed of tender or tropical plants about the first of May, either in the open or under the sashes.

In describing each plant, we will also instruct you about the time to sow the seed; and just here we will state, as a further guide to you, that all very small seeds must be covered very shallow—sown on the surface, rubbed over with the flat of the hand, and pressed down lightly with a piece of board. Seeds that are so small that they can scarcely be seen should be sown on the surface and patted down lightly with a smooth brick. Such seed will do better under glass, but will have to be shaded three or four hours in the middle of the day, or the sun may destroy the plants just as they germinate. A seed as large as that of the radish can be covered an inch or more and will come up readily.

A good plan when desirous of using a bed for starting flower seed is to choose a spot where water does not stand, on the east side of an outhouse, where the sunlight does not fall on the bed after ten o'clock. That amount of sunlight will be sufficient for the health of the seedling until large enough to transplant to the border. In a bed like this the seed can be sown in rows about three inches apart, and the name of the seed placed at the end of each row to show what you have to arrange in the border.

In covering the seed, do not use anything but sandy loam or light, rich soil from the forest or from an old rubbish heap. Sift enough soil to cover the seed. The soil beneath does not make so much difference. If it retains moisture, that will be sufficient.

If there is not sufficient rain, it is well to water the seed bed occasionally late in the evening so as to have all night for the water to soak into the soil. The same amount of water used in the morning would soon evaporate and would do little good.

### ABRONIA (ANNUAL).

A pretty trailing vine, suitable for rockeries, swinging baskets, window boxes, and vases, and makes a nice show in the border. It is very much like the verbenas, with clusters of fragrant, rosy-pink flowers, and has quite a lengthy season of bloom. Seed should be started in a box in April. Place in a sunny window, placing a glass over the box to retain moisture.

### ACROCLINIUM.

This plant is classed with the everlastings. The flowers, when cut and dried, are useful to make up winter bouquets.

The seed should be sown in the border where they are to grow. They make a nice show when the plants are grown several together among the other plants. The colors are rose and white. Sow the seed about April 15.

### ADONIS.

This is sometimes called "pheasant's eye." It is a profuse bloomer, growing about one foot high, bearing bright, scarlet flowers. There is also a yellow-flowered sort, but it is not so pretty.

Sow the seed in a small bed in rows three inches apart. In this way the weeds can be managed better. When the plants are large enough to handle, transplant to the permanent bed or border. Sow the seed about March 15.

### AGERATUM.

The cultivated varieties are from Mexico and the southwest part of the United States. The different colors are blue, rose, and white. They are all pretty, and are suitable for the border.

The seed should be sown in March in a hotbed, in three-inch-wide rows, and transplanted in the border when danger of frost has passed.

### ALYSSUM.

This is a free-flowering plant of great utility, is popular with every one, is easy to grow, and does well on any sort of soil. The flowers are in small white clusters and very fragrant, and are much used in making up bouquets and other floral work.

Alyssum of the little-gem type is used as a border for beds, as it is very compact and always a solid mass of white bloom. For borders, it should be planted about three inches apart, or sow a row of seed where the plants are wanted. Self-sown seed in the fall will come up in the spring, withstanding considerable frost.

### AMARANTHUS (LOVE LIES BLEEDING).

This family of plants are rather coarse, and are more appropriately used with large foliage plants in making up varicolored lawn beds. The most common of this plant grows about six feet high, has red stems, and every branch terminates in a deep-red raceme of flowers that droops very gracefully for a foot or more. Another variety that is really beautiful is known as "Joseph's coat." A full-grown plant of this variety will have deep-green leaves at the bottom, brown a little farther up, orange above that, and at the top a beautiful lemon-yellow color, sometimes almost pure white.

Any kind of soil will grow these plants, but in rich soil they grow much larger. Sow the seed in the place they are to grow, and thin out to two or three plants unless they have a bed to themselves, then leave one every eight or ten inches apart.

### AMBROSIA.

This plant does not lay any claim to beauty, but lays much stress on its delightful odor, all its own. It grows upright about one foot high, with foliage that very much resembles small oak leaves. When in bloom, it has long, slender spikes of what appears to be green seeds, but in reality are the flowers. When dried and placed among clothing, it renders a very pleasant odor for a long time.

This plant is not particular as to soil. Sow the seed anywhere at any time, and it will grow, often coming up the next spring from self-sown seed.

### AMMOBIUM.

This is classed with the everlastings, and is used in making up dried winter bouquets. It grows about eighteen inches high, with stiff, angular stems.

The variety known as "*Alatum Grandiflorum*" is the best, as it produces an enormous quantity of white flowers.

### SNAPDRAGON.

One of the most attractive of the old garden flowers. There is quite a variety of this plant—some dwarf, some medium, and others as tall as two feet; but all bearing beautiful spikes of bloom of many colors—yellow, scarlet, white, purple, etc.

Where the frost does not penetrate the soil more than an inch or two, this plant will be renewed the next spring from the old root. Although it is classed as an annual, in mild climates it proves to be a perennial.

Sow in a cold frame during the first of April and transplant to the border about April 15.

### ARNEBIA.

This grows about two feet high, blooming the whole summer. It is a very strong grower. The flowers are primrose yellow, with a black spot in the center.

Sow the seed in a cold frame in March; and when three or four inches high, set in the border about April 20.

### ASPERULA, SWEET WOODRUFF.

Asperula is a profuse bloomer, with clusters of small, sweet-scented flowers. It is a native of partially shaded situations. The dried flowers impart an agreeable odor, and are sometimes placed among clothing when stored away.

Sow the seed in April in the border where the plants are to remain. The plant grows about one foot high.

### ASTERS.

These are among the most beautiful and important of the summer and early autumn flowers. They will do well in any good soil. They have been known to do well in red clay when there was rain enough to keep the soil moist; but when grown in good soil, they will repay any extra labor that may be bestowed by a more sturdy growth, with more and finer blooms. They should be planted in a sunny situation north of Kentucky, but will do well in partial shade farther South, in rather heavy clay loam, into which has been worked a goodly proportion of well-rotted stable manure; and if there is any air-slacked lime about, scatter that on the land, and fork it in also, as the aster prefers a slightly alkaline soil.

Sow the seed about the first of May in the border; and when large enough to handle, transplant to any place required. Pour a little water around the roots, and press

the soil around firmly; and if the weather is hot, shade in the middle of the day for four or five days. They can be set eight or ten inches each way in a bed. Allow no weeds; cultivate every ten days; and when about ten inches high, cover the ground about four inches deep with straw or leaves to keep the moisture from evaporating in the hot summer weather and also to keep down weeds.

### **BACHELOR'S BUTTONS, OR GLOBE AMARANTH.**

The Globe Amaranth is classed with the everlastings, and can be cut and dried for winter flowers.

Sow the seed in May. They will grow in the poorest soil, even when too dry to grow weeds. The colors range from white to red and purple.

### **BALSAM, OR LADY'S SLIPPER.**

This is a fine old plant that has been greatly improved lately, ranging in colors from white to red and purple, blooming freely.

Sow the seed in early May where they can be transplanted twice to insure more and finer bloom. Plants should be grown in rich soil. They are of the easiest culture.

### **BROWALLIA.**

This is one of the best bedding plants that we have. It is covered with blue or white flowers all summer. The Browallias grow freely in any rich soil.

Sow the seed in a window box in late March or early April and transplant to the open ground the first of May. They grow about fifteen inches tall.

**CALENDULA, CAPE MARIGOLD.**

The marigolds are of the easiest cultivation, succeed everywhere and bloom continually. The flowers are of the finest glowing colors of sulphur yellow, golden yellow, and orange yellow; very double, and will thrive in any ordinary soil.

Sow the seed in March in the open ground where they are to grow.

**CALLIOPSIS.**

Calliopsis makes a quick growth. It has beautiful foliage, being one of our brightest and best summer bloomers, there being several variations of color in the bloom, gold and maroon being the prevailing colors.

Sow the seed in April where the plants are to remain. They grow about three feet high.

**CANDYTUFT.**

The Candytuft is a very desirable plant, easy to grow, and is much used in making up floral designs, bouquets, etc. It grows best in a cool, damp situation, where the strong evening sun does not shine directly on the plants. Any garden soil will grow this plant.

Sow the seed in March for summer use, and in August for fall. It does well in solid beds or mixed with other plants. Set eight or ten inches each way. The colors are from white to deep red.

**CELOSIA, OR COCKSCOMB.**

This showy plant of many forms is of the easiest culture and is one of the most brilliant of the summer and fall bloomers. The flowers are in great masses of various forms. The colors are most striking—vivid red



and crimson, yellow, orange, and pure white. A rich soil and plenty of moisture are requisites to best results.

Sow the seed in the open about the middle of April. They are easily transplanted when small, and can be scattered in the border; or when in a mass in a bed, they make a dazzling display when in full bloom.

### CENTAUREA, OR CORNFLOWER.

This plant is also called "bluet," "bluebottle," and "ragged sailor." Within the last few years much improvement has been made in this plant. The *Centaurea* is very easily grown, and will thrive and bloom even among the weeds; but when grown in masses and cultivated, it makes a fine display and is very useful in bouquets.

These plants will do well in any soil or situation. Sow the seed in March where they are to remain, and thin out to about ten inches each way. The plants that have been pulled out may be transplanted and will bloom later.

### COSMOS.

One of the notable autumn flowers is the *Cosmos*. It is a strong grower, about five feet high. Its bold flowers are exquisitely beautiful, and the effect is heightened by the graceful, feathery green foliage. *Cosmos* shows up best when planted in masses or used as a border in front of evergreen trees or fences.

Seed should be sown in April about where they are to remain unless early bloom is wanted; then the seed must be sown in window boxes in March. To insure early bloom, pinch off the tops when the plants are two feet high.

*Cosmos* does well in any soil. The long-stemmed

bloom of these plants makes them desirable for tall vases, and they keep well when cut.

### DIANTHUS, OR PINKS.

Pinks are among our most satisfactory flowers. They can be had in flower the entire summer when seed are sown early in window boxes. They are unsurpassed for color and fragrance. Seedlings are easily transplanted, and should be set about eight or nine inches apart. For the best results, plant in rich soil. These plants will live through the winter and will bloom much better the second year.

### FEVERFEW, OR PYRETHRUM.

A very pretty plant, whether in bloom or not. The foliage very much resembles a short-leaved fern, and the blossoms are white and yellow in great profusion all summer. It is much used for bouquets. It will grow in any good soil.

Sow the seed in April or early May.

### FOUR-O'CLOCK, OR MARVEL OF PERU.

This is a well-known and much-admired flower, producing a mass of bloom every evening and all summer long. The colors are white, yellow, crimson, striped, and variegated. Plant the seed in April.

This plant is of a gross nature, attaining a height of two feet and as much across, and is more suitable for a low hedge to cover unsightly places. Any soil will suit this plant.

### MARGUERITE CARNATIONS.

We regard these as the best of the so-called "pinks," especially for the open garden. The Marguerite Carna-

tions will bloom in a few weeks from the time the seed is sown, and is the most prolific bloomer of the whole group of pinks. The plants are strong, compact, and dwarf in habit, being easy to manage, and make the best of bedding plants. Not being perfectly hardy, they may be protected with litter in the winter. They make good window plants.

For most satisfactory results, sow the seed every spring to get more healthy plants.

The flowers are over two inches across and are delightfully fragrant. There are several colors, including rose, scarlet, yellow, white, etc.

For very early bloom, plant the seed in the window box in March and sow in the garden in April. They will do nicely in good garden soil, and heavy clay soil will produce plenty of rich-colored bloom.

### MIGNONETTE.

The flower garden would hardly be complete without this delightfully sweet plant. There are hundreds of more showy flowers in cultivation, but this little plant has won its way into the hearts of all flower lovers strictly on its merits. The bloom is insignificant, but the perfume is ideal.

Sow the seed in the garden as soon as the land can be prepared in March or April. Good garden soil will suffice. The plant will spread over one foot, producing many spikes of bloom. If wanted for window culture, sow the seed in large pots or boxes at any time, as the plants will soon be in bloom and remain so for a long time. The more the bloom is removed, the more it will bloom.

### NASTURTIIUM.

The Nasturtium is most easily grown, and makes a most excellent bedding plant. The foliage is very smooth and glossy, of various shades of green, gold, bronze, and purple. The flowers are variously colored—sulphur yellow, yellow, gold, orange, scarlet red, and maroon.

Plant the seed the last of April. If a bed is required, plant the seed seven or eight inches each way. They will soon cover the ground, the flowers will soon appear, and there will be about as many flowers as leaves. This plant seems to have no insect enemies and can be grown in poor or thin soil.

The climbing Nasturtium grows six or seven feet high, and requires the same treatment as the dwarf, but should be trained to a trellis.

### PANSIES.

Pansies thrive best in cool, moist weather, making their finest blooms in spring and fall. When grown through the summer, they should be set where the sun will not shine on them after noonday. If treated thus and planted in very rich soil and given plenty of water, a quantity of the most beautiful bloom can be had. Every color but red is reproduced in the pansy.

Sow the seed in March in the garden. The plants should be five or six inches apart for good results. Or for early spring blooming, sow in window boxes in November or December and plant in the garden in March.

### PETUNIAS.

The Petunia is one of the most reliable bedding plants we have. Neither heat, cold, wet, nor drought appears

to interfere with its welfare. It blooms almost from the starting of the seed, and is a continuous mass of flowers until freezing weather cuts it down. There are few plants that can compete with the *Petunia* in beauty of color and markings, and the faint odor after sunset is delightful.

Sow the seed in March. A light frost does not kill the plants. It is well to pinch off the tops often to induce new growth to keep the plants in better flowering condition. This plant will grow in any soil, but will grow very rank in rich ground. When used in a solid bed, the plants should be about five or six inches apart.

### POPPIES.

Some authorities will tell you how to cultivate Poppies. They really need no cultivation, as they will grow and thrive on the roadside, in weeds, or on the lawn in the grass, and, when once sown, will come up volunteer year after year, their beautiful crimson blossoms waving in bold relief against the green sod. There is an almost endless range of shades of color, from pure white to deepest crimson, with all manner of markings and variegations, and from single to the most compact double.

The seed should be sown in February or March where the plants are to remain.

### PORTULACA.

This is a most beautiful plant when in full bloom, having many most charming colors and shades of pink, red, scarlet, light and dark yellow, white, and variations; in both single and double. It is fine for window boxes.

Sow the seed from March to May. They will grow in any good soil.

## STOCKS.

All of this family are deliciously sweet-scented, and by many are quite a favorite. The blooms are borne in large clusters, and some of the varieties will produce in these clusters single florets that will measure over two inches across. Stocks do better when grown in a situation where the afternoon sun does not shine. They like a cool place, and should have rich soil and plenty of water.

Sow seed for early plants in the window box in March, and for a later crop in April out of doors.

## SWEET PEAS.

These are one of the most popular of our annuals. The specialist in late years has produced larger and lovelier flowers than ever before. They are often grown in clumps and in separate colors. There are many colors and shades—pink, red, blue, purple, salmon, and all of the intermediate shades—and the odor cannot be excelled.

The soil should be rich, deep, and moist. Sow the seed thickly in a double row about eight inches between, having broken the soil about ten inches deep. Cover the seed one inch deep, and spread one inch deep of well-rotted manure over the rows. When working the peas every eight or ten days, the manure will be mixed with the soil where it will do the most good. When the plants get four inches high, stick brush three feet high between the rows so the vines can climb on it.

Sweet Peas are often sown in October, but are sometimes winter killed. We sow them in February or March with good results.

### VERBENA.

To have early plants to set in the bed or border, they should be started in a window box, the seed to be sown in March; and for a later crop, sow the seed in the ground in April. Verbenas raised from seed are usually sweet-scented, and are much finer in every respect. Plant about ten or twelve inches each way when in a solid bed. The colors range through red, scarlet, crimson, purple, white, and some are variegated in a most remarkable manner. Plant in good soil, and cover the bed about one inch deep with old rotted manure or leaf mold. If ready-to-bloom bedding plants are wanted, they should be procured from a florist.

### ZERANTHEMUM.

A beautiful, free-flowering plant, growing about one foot high, is the Zeranthemum. When the blooms are well developed, cut them with long stems and dry them for winter bouquets. They retain their color indefinitely and are known as everlasting. The flowers are large, globe-shaped. The colors are white, yellow, and purple. The seed germinate easily when planted in the open ground in April or May. They will do best in rich soil.

### ZEA JAPONICA, ORNAMENTAL GRASS.

This is a Japanese variegated corn, showing four colors—white, red, green, and pink. It makes a fine effect as a center for a large flower bed or an individual plant on the lawn, and may be used as a background for other plants of darker colors.

The seed may be planted in the ground in rich soil in April or early in May.

### ZINNIA.

There seems to be no end to the colors and shading of the Zinnia, and it blooms in profusion all through the season, there being nothing more attractive than a large, well-kept bed of this flower. Some have single and others double blooms.

There will be no trouble to find suitable soil for Zinnias, as they will grow anywhere. They will do remarkably well in hard red clay.

Sow in April, and thin out to eight or nine inches each way. As they will transplant easily, fill up the gaps where missing, pouring a little water in the hole when planting, or, better still, plant in rainy weather.

### PHLOX DRUMMONDII.

There is nothing better for bedding purposes than Phlox Drummondii. These splendid half-dwarf annual phloxes cannot be too much praised for beauty. The plants are always covered with large flowers of the most beautiful colors, growing about ten inches high. They do well everywhere, and are in great favor with every one for bedding on the lawn, and look nice with a general mixture of plants. It is best to treat them as annuals. They come quickly into bloom from seed and continue until killed by frost. The colors range from deep red to pure white. Some of the newer sorts show light-yellow tints.

Sow the seed in April in good soil.

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In the preceding we have given you a list of what we thought would be the most useful and at the same time the most easy plants to handle.



There are hundreds of plants mentioned in the catalogues, and new ones are being introduced every year, from which you can try your ability as a grower of new species.

What we have already given you in the flower line were annuals, or plants of which the seed is to be sown every year.

### LOBELIA.

This tribe of plants includes various habits of growth. Some grow erect, with stiff stems; but the most graceful are the dwarf forms, which are most suitable for swinging baskets, garden vases, etc. The colors are the most beautiful shades of blue, and there is also white, and one variety is scarlet.

### GAILLARDIA.

Gaillardias are perennials in warmer latitudes, but to be on the safe side it is better to sow the seed each spring. They are among the most showy of the bedding plants. They bloom constantly all summer and fall until frost cuts them down. They look fine made up in bouquets and for house decoration.

Sow the seed thinly in a large bed, and do not thin them out. In that way they will do well and will make more flowers. Plant in a rich soil in a sunny place, and you will have something to delight the eye all through the season. They grow about two feet high and have a daisylike bloom about two inches across, and are all shades of red, orange, and yellow, with variations.

### HELIOTROPE.

This is one of the most delightfully perfumed flowers that we have. It grows easily from seed sown in April or May, and is soon in bloom. If planted in rich, moist

soil, it will continue to bloom until frost; and if placed in a large pot or box, it will bloom nearly all winter in a room where no frost enters. There are all shades from deep purple to pure white.

### PERIWINKLE, OR VINCA.

This is a very satisfactory plant for making lawn beds. When massed together in beds, they are so uniform in size that the bed often appears to have been clipped, and the flowers are so freely produced that there is never a time when there is not a generous supply of bloom; but the best recommendation for the Vinca is the fact that it always thrives in good soil, whether there is drought or plenty of rain.

The flowers are about one and one-half inches in diameter—pink, with a purple eye, and white, with a pink eye—growing about twelve inches high.

Sow the seed in the garden in April, and transplant in the border in May.

### FORGET-ME-NOT.

The Forget-Me-Not is one of the daintiest of all the garden flowers. The flowerets are small, a beautiful light blue, with a white center, borne in clusters. This has always been a favorite with every one, and is much used with cut flowers.

Sow in March in the window box, and plant out about April 20 in some place where the sun will not shine on it very much, as this plant is partial to a cool, rich place.

### HYBISCUS.

Our common Althea is a hardy variety of Hybiscus. Of the many varieties, some are hardy, some are half

hardy, and others are tender and will not stand frost. Of the latter, the Chinese is the most beautiful, having flowers four and five inches across, both single and double flowering, and of lovely satiny shades of deep crimson, red, pink, and white.

These will grow in the garden, but should be potted and placed indoors before a freeze comes. They are generally used as tub plants on the veranda or on the lawn. The single sorts usually die down to the ground in the fall, but come from the root the next season. They are known as the African varieties. Still others have to be started from seed each spring. They all make fine hedges for summer use, and a large bed of these plants gives to a lawn a grand effect.

Start the seed in a box in the house in March or early April and plant in the open in rich soil about the first of May, and they will bloom the same year.

### PHLOX (PERENNIAL).

The hardy Phlox is becoming one of the most popular plants in the flower garden. Such improvement has been made in the last few years that some of the individual flowers will easily cover a fifty-cent piece, and there is every shade, from deep red down to pure white, also light and dark scarlet and violet tints.

The seed of this Phlox should be sown in rows in a small bed in the garden in rich soil. Cover the seed one-half inch deep. The seed often do not germinate readily when kept dry over winter, and on that account they should be sown late in the fall or in December, so that they will be frozen as nature requires. They will then come up better.

Plant hardy Phlox in a partly shaded place, as the

midsummer sun dries them up and they will not do so well. They require rich sandy soil. Set them about twelve inches each way when made into a bed, and cover the ground with well-rotted manure or old rotted leaves. If the tops of the shoots are pinched off when they are a few inches high, they will make shoots all down the stems and make more bloom and the plants will be more stocky. The surest and most satisfactory method would be to buy the plants from a florist.

### SCABIOSA.

The Scabiosas are among the very finest bedding plants that we have. There is a wide range of colors and tints among these plants. Some produce the deepest purple bloom imaginable; some, white; others, vivid red, orange, and golden yellow. They are also very showy when mixed with other plants in the border. They have long, wiry stems, and work in well with bunches of cut flowers and in vases.

Scabiosas do fine in ordinary garden soil; and if grown exclusively in a bed, sow the seed thinly and cover about one-half inch deep, and do not thin them out; they will take care of themselves if the weeds are kept down.

The seed may be sown about April 10.

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## CLIMBERS, OR VINES (ANNUALS).

### BALSAM APPLE.

The Balsam Apple has a very ornamental foliage, and is a very graceful vine for trellis; and as it will grow over ten feet high, it makes a fine porch screen.

The fruits are very attractive when ripening, being a beautiful deep yellow. When they split open, the seed are seen within and are a beautiful scarlet. This vine will grow in any soil. Plant the seed in April where they are to grow, and place twine or wire for it to climb.

### THUNBERGIA, OR BLACK-EYED SUSAN.

This is a very attractive vine when in full bloom, having a most distinct and refined aspect. It is one of the old favorites, and is excellent for trellises, vases, and rustic work. The flowers are orange, buff, white, etc., with a beautiful deep-brown center, from which it takes its name of "Black-Eyed Susan." In very rich soil this vine will climb as much as twelve feet, but nearly all the seedmen claim about five or six feet.

Plant the seed about April 15.

### BRYONOPSIS.

The Bryonopsis is really a gourd, but the foliage very much resembles the ivy. It is a most desirable vine for arbors and trellises and as a screen for porches and unsightly premises. The growth is very rapid, and will soon reach as high as twenty feet. The fruits, when ripe, are red, with white markings, and show up beautifully among the light-green leaves. They flourish best in rich soil.

Plant the seed about the middle of April. Work the ground around the plants until they are a foot high, so that the weeds will not smother them before they get a start. At the last working place about two inches deep of stable manure about one foot wide about the roots to keep the ground moist and to fertilize them.

### COBÆA SCANDENS.

This is a very rapid grower, making as much as thirty feet in a summer, bearing a wealth of beautiful bell-shaped flowers about two inches across. It is fine for training over unsightly objects or for training over pergolas, windmills, etc.

A peculiar feature about planting the seed is that they must be set on edge and very lightly covered, not over one-fourth of an inch deep. If laid flat, they will hardly come up at all. Any good soil will grow this vine. The seed may be started in a window box the first of March in a sunny room, and set in the ground the first of May.

Cobæa Scandens bears both white and purple flowers.

### CONVOLVULUS.

This is what our grandmothers called "Morning-Glories," and have always been great favorites everywhere on account of their rapid growth and most beautiful flowers, producing the most charming tints of violet, purple, rose, pink, and white in the greatest profusion. They begin to bloom when only a few feet high and continue all through the season until killed by frost. They are excellent for covering trellises, outhouses, old fences, porches, and are beautiful when growing over rockeries.

### CYPRESS VINE.

This is one of the most graceful vines imaginable, with its stems clothed with a beautiful feathery foliage and profusely spangled with intensely bright flowers that shine like stars against the bright-green foliage. As this is not dense enough for shade and is grown for its beauty, it should be trained on fences or a light trellis about ten feet high.

Sow the seed in April in any good soil. There are white, pink, and crimson colors.

### MOONFLOWER.

The Moonflower is a near relative to the Morning-Glory; but many of them are late about blooming when the seed are planted in the garden, and should, therefore, be started in the window box about the first of April, to be planted out the first of May. They are all tender, and those that make tubers can be wintered in a dry cellar, and will grow rapidly the next spring and be in bloom in a few weeks. The colors are white, rose, lavender, and blue. They should be grown in rich soil. Plants can be bought from any of the florists.

### HYACINTH BEAN.

There are several kinds of this bean. One of them is the old Crimson Runner. They are very rapid-growing vines, and are very satisfactory for screens in front of porches and windows. The flowers are of various shades of color—white, purple, and red. The flowers are in clusters, resembling pea blooms, and have a delightful odor.

The beans should be planted the last week in April. They will thrive in any kind of soil.

### GOURDS.

The old well-known and useful Dipper Gourd has many allies—such as the Sugar Trough, Nest Egg, etc.—some holding as much as ten gallons, with a number of strange and beautifully colored and marked sorts. The Dipper and ornamental sorts can be grown on arbors, trees, fences, and sheds. The Sugar Trough must be

grown on the ground and the fruit encouraged to stand square on the blossom end to make it as symmetrical as possible.

The seed of the Dipper Gourd must be started in March to mature the fruit before frost. The Sugar Trough Gourd can be planted about the middle of April; and to grow very large fruit, allow only one fruit to the vine. Plant in very rich soil, and cover the ground one inch deep with rotten manure. This gourd does best on the ground.

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## PERENNIALS.

Plants That Live Year After Year After Being  
Propagated from Seeds or Cuttings.

### ALTHEA.

Altheas are suitable for hedges and as individual plants or for grouping in the lawn. There are many colors of bloom, both double and single flowers. The plants are as hardy as an oak, will grow anywhere, and are grown from seed or cuttings placed where they are to grow. Place the cuttings in November.

### ANEMONES.

The Anemones are very attractive, producing their pretty flowers year after year. Some of the flowers are three inches across, on stems two feet high, and are fine for cutting, for vases, and make good house plants for winter bloom. Some varieties bloom the first year from seed. The colors are scarlet, blue, and white.

Anemones are grown from seed, but it is preferable to



purchase roots from the seedmen. This plant is hardy everywhere and will grow in any soil.

### **ANTHEMIS, YELLOW CHAMOMILE.**

It is also called "Hardy Marguerite," and is one of the most satisfactory of the summer flowering perennials. It is always in bloom, of a bushy habit, about twelve inches high, with golden-yellow flowers of daisy-like form. It is propagated from seed sown in April or from cuttings or division of the old plants made in April or May or gotten from a florist.

### **COLUMBINE.**

The Columbine is an old-fashioned perennial, one of the best of the early summer flowering plants. The flowers are rather odd, but very attractive, and are borne in profusion well above the leaves. The foliage itself is very attractive, and retains its freshness all summer. There are several shades of blue, red, lilac, yellow, and white. It is easily grown from seed planted in November or in March.

Columbine does best in a damp, rich soil.

### **CAMPANULA, OR CANTERBURY BELLS.**

Campanulas are beautiful plants, much used in making large beds on lawns, and they make a fine display as a single specimen grown with other flowers. They are rich in colors (blue, white, and pink are the leading shades), profuse in bloom, and easy to grow.

Campanula seed should be sown in the garden in June, and the next spring should be transplanted to the bed where they are to bloom. Be sure to make the ground wet enough so as to take them up with a ball of wet

earth, and set them in the bed without breaking the ball. Pour water in the hole and pack the earth close one foot each way. If convenient, cover the seedlings in the coldest weather with cedar brush or an old sash, and they will do much better. They are hardy; but if not protected in severe weather, some will get killed. They do best in rich soil. They grow from one to two feet high.

### **STOKESIA CYANEA, CORNFLOWER ASTER.**

This is a hardy plant, bearing lovely light-blue flowers from June until August. They are fine for making up bouquets and other cut-flower work.

Stokesias do well in any good garden soil. Sow the seed in March or April. The plants grow about one foot high, and should be about one foot each way when made into a solid bed. We would advise getting the plants from a florist.

### **COWSLIP.**

The old-fashioned Yellow Cowslip is one of the earliest flowers to bloom, putting out its beautiful yellow clusters of flowers in April, at a time when the earliest flowers are fading. They always show to the best advantage when used as a border along the walk or driveway. They are usually increased by division of the old plants, but can be grown from seed sown in the latter part of March or early April.

The Cowslip will grow in poor land, but will do better in good garden soil. They grow about six inches high, about twelve inches across, when well grown.

### **DAISY, BELLIS.**

Double Daisies are much in favor for edging along flower borders, blooming freely from April until June or

July. They grow only about six or seven inches high, and the blossoms are of charming shades of rose, pink, and white.

The seed should be started in the window box in February or March, and transplanted to the border as soon as they are large enough to handle. They will stand considerable cold and not be injured. They should be grown in rich, moist soil. A few planted in a half-shady, cool place will bloom later than those in full sunlight.

### FOXGLOVE.

The Foxglove shows up well when planted among shrubbery, and does about as well in the open. It produces long sprays of beautiful flowers on stems three feet high, the colors being rose, purple, yellow, white, etc. It is perfectly hardy, and appears to improve with age.

Sow the seed in March or April in the garden; and when large enough to handle, transplant to the place they are to remain. These plants will thrive best in rich soil.

### PAMPAS GRASS.

A magnificent ornamental plant that comes to us from South America is Pampas Grass. There is no other grass that gives so grand an effect on the lawn as this. When the plumes have matured, the plant stands about nine feet high. It blooms the second year from seed. If an immediate effect is required, buy the plants from a nursery. The plumes are white, with a beautiful silvery sheen, and are much used in making up winter bouquets and other decorations. The bunch of grass should be mashed down to the ground about December 20 and covered with ten or twelve inches of straw, and

about the middle of April it should be cut off level with the sod.

### EULALIA GRASS.

The *Eulalia Zebrina* is a most desirable ornamental grass for lawns. Be they small or large, the blades of grass are barred across in a most pleasing manner with green and yellow, and late in the season the plant throws up several graceful plumes that can be mixed in with winter bouquets with good effect.

A *Eulalia* plant, when not in seed, grows about five feet high. Plants are grown from division of the roots or from seed, which should be sown in April, and will grow in any soil. It is as hardy as an oak.

*Eulalia Striata* is striped white and green; otherwise the same.

### GOLDEN GLOW.

This is one of the best yellow flowers that has been introduced in many years, being a favorite with every one. It dies down to the ground after frost; but being hardy, it comes up from the root again in the spring, and is in full bloom from June until September, producing a great quantity of very double yellow bloom three inches across. The plant grows about seven feet high. It should be grown in good soil from plants obtained from the nursery.

### HOLLYHOCK.

These old-fashioned, stately plants are most striking when planted in groups or in long rows in front of shrubbery, etc., or they may be used as a background for other plants that are of a lower habit. They have a great range of colors and shades, and are both double and sin-

gle. The colors run through white, red, rose, yellow, lavender, and nearly black.

The Hollyhock will live through several years, but young plants produce the best bloom. Sow the seed where the plants are to grow, in rich soil. The seed can be planted in September or in March. They will grow and bloom whether thinned out or not.

### LAVANDULA VERA, FLOWERING LAVENDER.

The Flowering Lavender is a sweet-scented, shrubby plant, growing about thirty inches high and producing small blue flowers, useful to place among clothing, usually in sachet form, giving a very pleasant and lasting odor. It is hardy, and will thrive in almost any kind of soil.

The seed should be sown in the open in April.

### MIMULUS, MONKEY FLOWER.

These are profuse blooming plants, producing handsome flowers in various colors—such as maroon, crimson, pink, yellow, and white—with spots and blotches. The Mimulus will grow in any soil; all it requires is a damp, partly shaded situation.

Sow the seed in a moist place (not wet) in the garden in March or April. Press the seed down firmly with a brick after placing less than one-fourth of an inch of sifted coal ashes on them. They will bear careful transplanting. Remove with a ball of earth if possible. In selecting seed, choose the hardy varieties. As they require careful handling when starting the seedlings, we would advise getting the plants from a florist.

### MONK'S HOOD, ACONITUM.

Aconite produces an abundance of oddly formed flowers. The colors are blue and white. The flower stalks grow as tall as three feet. These plants will grow in any garden soil.

Sow the seed in the garden in February, March, or April. Cover the seed lightly with sandy soil or sifted coal ashes.

Aconite is hardy.

### SWEET WILLIAM.

This is an old-fashioned favorite that produces masses of lovely, sweet-scented flowers through a long season. A solid bed of Sweet William is one of the most beautiful sights imaginable. This flower will grow in any good garden soil. As they do not bloom the first year, the seed can be sown in July or August and wintered without protection. The plants should be set eight inches each way in the bed in March. The colors are white, pink, carmine, crimson, etc.

### VIOLETS.

This is the old and popular Sweet Violet, blooming very early in the spring and also late in the autumn. The Single Violet is the one mostly in use on account of its superb flowers and delightful odor. The plant is so well known that a description is unnecessary here. The surest way to get any desired sort would be to buy them from a florist.

Double blue and double white Violets are freaks and have little or no odor.

Old Violet roots can be divided, and the runners can be used to make new plants. In either case, set the

plants six or eight inches each way if planted in a bed; if planted in rows, set them eight or ten inches apart.

Being a native of the woodlands, the Violet naturally delights in a cool and shady situation, with plenty of leaf mold.

Place a few Violets in a cold frame ten inches deep, using an old sash to keep the snow and wind out, and you will have bloom all through the winter.

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The following are perennial climbers:

### CLEMATIS.

Clematis has glossy, green leaves, which are an ornament in themselves; but when in full bloom, with its great quantities of star-shaped and sweet-scented flowers, it would be hard to find anything more satisfactory for the arbor or porch screen, and will grow in the shade as well as in the full sunlight, and will grow in almost any good soil. It grows so rapidly that the old vine can be cut down to the ground and in a few days the new shoots will be several inches high.

There are several varieties of Clematis. They are all hardy and very satisfactory vines. Some of them produce great panicles of pure-white flowers that almost cover the plant; others have large blooms of single individual flowers of pure white, lilac, rose, purple, scarlet, and violet, according to variety. All are of great merit for decorative purposes.

### JAPANESE HOP VINE.

The Japanese Hop Vine has beautifully variegated large green and white leaves, and is a most admirable vine

for a screen or trellis. It grows very rapidly, and will soon reach twenty to twenty-five feet high, and continues to grow until cut down by frost. The roots are hardy, coming up again in the spring. The vine requires rich soil to grow well.

The seed should be sown in March or April; but for immediate effect, get the roots from the nursery.

### JAPANESE KUDZU VINE.

The Kudzu Vine is a beautiful climber, remarkable for its vigorous growth and handsome flowers. The blossoms are like the Wistaria, but larger. The color is a pleasing shade of purple. The foliage is luxuriant, resembling the leaf of a bean. The vine is extremely rapid in growth, making several inches in a day, and will continue to grow until cut down by frost. The roots are hardy, and get stronger every year.

Plant in good soil. This vine can be grown from seed, which should be planted in April. Plants can be gotten from a florist.

### PASSIFLORA, PASSION FLOWER.

The Passiflora is represented by several varieties, but the most hardy and most satisfactory is the one called "*Cærulea*." These vines, when grown singly, do not give good results as a screen, but are beautiful when trained about a column or over a trellis, old stump, or on a fence. They should have good soil to do well.

Passifloras are propagated from pieces of the roots or from seeds, which should be planted in March. Plants may be obtained from a greenhouse.



## AMPELOPSIS QUINQUEFOLIA, THE VIRGINIA CREEPER.

This is one of the most graceful of our native vines, and is most useful to cover walls, outhouses, arbors, and for porch screens, etc. It fastens to any surface by little adhesive rootlets, thereby doing away with the need of an artificial support. The roots or seeds should be planted in rich soil, and will do best on the northeast side of the object it is to creep on.

The seed should be sown in the fall or in March.

This vine is wild over a large territory in the Southern States, and is often taken for Poison Oak or Poison Ivy, which we understand are the same; but there is a wide difference. The Poison Oak has but three glossy, deep-green leaves at a place, while the Virginia Creeper has five pretty light-green leaves spread out on an even plane. It is hardy.

## AMPELOPSIS, VEITCHII.

This is the Japanese Ivy, also called "Boston Ivy." Ampelopsis was introduced into the United States from Japan many years ago, and has proved to be one of the most satisfactory of creepers. It will creep on stone or brick as high as sixty feet. The bloom is not conspicuous. The leaves are very graceful; and when touched by the frost, they change to most beautiful shades of bronze, and finally before shedding the leaves it is a mass of flaming crimson. This vine is desirable for covering unsightly walls and other objects. It is perfectly hardy and appears to have no insect enemies.

The seed can be sown along the wall about six or eight inches away. We would advise obtaining roots from a nursery to get an earlier start.

### WISTARIA, VIRGIN'S BOWER.

The Wistaria is a hardy, shrubby climber, of great value for training over arbors, buildings, trees, etc. The blooms are produced in large panicles of purple or white in early spring. It is one of the most desirable of vines, improving year by year.

Plant the seed in rich ground in April. It requires three or four years to grow a blooming vine from seed. We would advise procuring a plant from a nursery for immediate effect.

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### ABUTILON, FLOWERING MAPLE.

The Abutilon will stand more rough treatment and neglect than almost any other house plant. It grows rapidly and is soon in bloom. The leaves are very ornamental, often beautifully variegated with white or yellow. The flowers are bell-shaped and very graceful, of many colors and shades—red, orange, yellow, and white. They make a very desirable pot plant for the house, doing nicely where there is a limited supply of sunshine. This plant should have rich, damp soil.

The Abutilon can be grown from seed or from cuttings of the green wood. The seed must be started in April in the window box. This plant is not hardy, but will keep in a room where it does not freeze.

### FUCHSIA.

This is one of the most beautiful pot plants that we have. It will bloom profusely the year around. It grows very rapidly from seeds or from cuttings.

Fuchsias should be grown in rich sandy loam, and

should be placed where they will get only an hour or two of the morning sun, and should be well sprinkled over the foliage at least once each day; but they should not be kept wet at the roots (merely damp) for best results. Give them a little liquid manure every two weeks.

The seed can be started in the window box in March or April, but results are so uncertain that we advise getting well-established plants from a florist.

### KENILWORTH IVY.

This is a charming little trailing plant, with small purple flowers. It is a very pretty plant for vases, swinging baskets, rockeries, etc.

Kenilworth Ivy is easily grown from seed sown in the early summer, and will grow anywhere. It is half hardy.

The following are hardy:

### HARDY ENGLISH PRIMROSE.

The English Primrose well deserves a place in every flower garden on account of its bright and cheerful aspect. If given a little attention at first, it will take care of itself and will produce enough lovely canary-yellow bloom to well pay for the small amount of care required.

Sow the seed in good garden soil in April.

### CHRYSANTHEMUMS.

When heavy frosts come, the Chrysanthemum is the last to give up to the advance of the Ice King. There are many beautiful colors and shades in this weedy, but very essential, flower. White, yellow, and red are the primary colors.

This plant is easily propagated from seeds, cuttings from the tops, and division of the roots, which should be done in April or early in May. The seed must be planted in a cool, moist place in rich soil and transplanted permanently as soon as they can be handled.

### HONEYSUCKLE.

The much-loved Honeysuckle is always a welcomed plant with every one, always ready to do duty as an ornament on the lawn, or to hide some unsightly object, or acting as a screen at the veranda, and in the blooming season to emit the most delightful odor. Being ever-green, it is useful the whole year, doing well in any kind of soil.

Roots should be gotten from the nursery.

### HARDY HYDRANGEA.

The Hydrangea is about the best-known and most popular summer flowering shrub in cultivation. The flowers are produced in dense panicles a foot long in profusion, are white at first, but gradually change to a deep rose color, and remain in that condition for several weeks. They are increased from cuttings from the green wood set in a moist, shady place until rooted, which will be from two to four weeks; also from division of the old plants.

Plants can be gotten from any nursery.

### LILAC.

These lovely, old-fashioned shrubs are indispensable in all gardens. The richly perfumed and delicately tinted flowers are much sought in early spring for bou-

quets. They are commonly increased from division of the old roots in March or October.

Lilacs will thrive in any ordinary soil by placing on the surface around the bush some old, well-rotted manure. This must be done in November and worked into the soil in the spring. Well-grown plants will be eight feet or more in height.

### **MOCK ORANGE, OR WEEPING SYRINGA.**

This is a very popular and desirable shrub, bearing a great quantity of pure-white bloom, very much like an orange flower in appearance and in perfume, blooming in June, requiring good soil. This plant is usually grown from cuttings placed in a damp place in March, and can be increased by dividing the roots of old bushes.

Syringas grow about seven feet high. Plants should be gotten from a nursery.

### **PRIVET.**

The Privet is properly a hedge plant, but can be grown singly or in clumps on the lawn and trimmed into all sorts of fantastic shapes; and in the hands of a tasty trimmer, some beautiful objects can be worked out. These are increased by cuttings, and will grow in any good soil.

There are several varieties of this shrub, some more dwarf than others. When used for hedges, they should be set from four to six inches apart and trimmed frequently to induce a dense growth.

The nurseries can furnish this plant in large quantities.

### FRINGE TREE.

This is a beautiful, small ornamental tree, growing about ten feet high, completely covered in the blooming season with fringed, lacelike white flowers in the early summer. It is increased by cuttings.

The plant should be obtained from the nursery for the best results.

### SNOWBALL.

The Snowball is one of the best ornamental shrubs. It bears abundant white balls of bloom that have a beautiful setting in the deep-green foliage.

This shrub blooms in May, and grows about eight feet high, the bush itself being very ornamental. It is increased by cuttings. It will grow in any soil, but does better when a little manure is spread about the plant. For immediate effect, secure two-year-old or three-year-old plants from the nursery.

### SPIREAS.

The Spireas are a numerous family, of easy culture, that differ so in character and in size and time of bloom that there are varieties suited to almost every purpose. They are all grown from cuttings and from root divisions. The colors are red, rose, blue, pink, and white. All are desirable for clumps and hedge rows. They will grow anywhere.

### WEIGELAS.

These are indispensable for ornamental effects. They thrive in any soil, are strong-growing and hardy. They make fine specimen plants, being very graceful, and are desirable for grouping and massing in front of trees and along driveways. The colors are rose, pink, and white.

The blooming season is May and June. They are multiplied by cuttings in April or September if kept wet. The safest plan is to buy from a nursery and plant them in November.

### **BARBERRY, THUNBERGII.**

It is sometimes called "Berberry." It is a beautiful plant, and is often used as a hedge shrub. The leaves are green in summer and red in autumn. It produces yellow flowers in April and May, followed by scarlet fruits.

### **CALACANTHUS, SWEET SHRUB.**

This hardy shrub is of graceful, upright growth, and does well in any soil, either in shade or full sunshine. It has an aromatic fragrance and rich maroon flowers, with an agreeable odor similar to strawberries. The plant is usually increased by dividing the roots or by chopping the roots into small pieces and planting them in a row. Each piece will make a plant in a few weeks. This should be done in March. If plants are gotten from the nursery, set them out in October or November.

### **CRAPE MYRTLE.**

This shrub is not planted as widely as it should be. It is one of the most beautiful plants we have when in full bloom. The blooming season is in July and August, at a time when most of the shrubbery is out of flower. When a bush is well established, it can be cut down to the ground in early spring, when it will make new growth, with double the quantity of bloom, and the form of the bush will be a perfect globe shape.

There are two varieties of Crape Myrtle—white and pink. Both are good. As this shrub is of slow growth,

well-grown bushes should be planted to get immediate effect. Plant in October or February.

In the extreme South this shrub grows to the dimensions of a small tree.

### DEUTZIAS.

This is a profuse flowering family of shrubs, hardy, and will grow in any soil. There is nothing more useful for shrubberies than the various types of the Deutzias. They also make a nice show when planted in groups on the lawn. The plants are increased from cuttings of the new wood taken in September and October and placed in a row in the open ground in a protected situation, covering thinly with leaves or straw on the approach of winter.

Most of the Deutzias have beautiful flowers, mostly single, bell-shaped, and drooping; some are double, and range in tints from red to pure white, blooming in the spring.

### TAMARIX.

The Tamarix is a shrub of slender but strong growth, graceful, very much resembling the foliage of asparagus. The small flowers are in masses all over the smaller branches, giving a charming effect in bright rose or red. The Tamarix is hardy in the most Northern States with no protection, and will grow in any ordinary soil. Get strong plants from the nursery and plant them out in October or November.

### APOIS TUBEROSA, TUBEROUS-ROOTED WISTARIA.

This is a very desirable twining vine, and is very much like the purple-flowered Virgin's Bower both in leaf and



bloom. It grows to a height of eight or ten feet. It dies to the ground at the approach of winter. The flowers have a delicious violet fragrance. This plant does best from division of the roots for early effect, and thrives best in rich soil.

### PLATYCODON, CHINESE BELLFLOWER.

It is also known as the "Tuberous-Rooted Clematis." It is not a climber, but a low-growing herbaceous plant, with fine, showy foliage and beautiful bell-shaped flowers of white and a deep violet blue. It blooms freely and continuously. It is increased by cuttings and by division of the roots. It will grow in any situation, but should be planted in rich soil.

The plant is suitable for lawns, mixed beds, or pots, and can be had of the florist.

### CRINUM.

The Crinums are plants of great beauty, very much resembling lilies, but send up stalks like an *Amaryllis* and produce from twelve to twenty-four white flowers, with pink or carmine stripes through each petal. They are more suited to pot culture than for the open ground; but when planted in the open in a rich sandy loam, they do remarkably well. They must be planted four inches deep from the top of the bulb. When grown in pots, fill the pot to within one inch of the top with rich sandy loam; set the bulb on top of the soil, and set in some dark place until the roots have penetrated several inches deep, when the pot may be set in full light. Keep the soil moist.

We have grown Crinums out of doors in the South with very satisfactory results. One plant was noted

that put up seven stalks, some of the stalks having as many as thirteen large flowers.

### GLADIOLUS.

The Gladiolus are among the most gorgeous of summer flowers. For best results, they should be grown in a sunny place in good sandy loam. If they have to be planted in clay loam, scatter a little well-rotted manure on the surface after planting, and they will do very well. The first planting can be made on April 15; and for a succession of bloom, plant every two or three weeks until the end of July. When planting a quantity of bulbs, set them three inches each way and about four inches deep.

The Gladiolus is increased from little bulbs around the old one and from seed. To get the best, buy them from a florist.

### HARDY GLOXINIA, INCARVILLEA DELAVAYI.

This is a very desirable plant, one of the choicest perennials. It produces large Gloxinia-like, rose-colored flowers, which last a long time. These are in clusters on long stems eighteen inches high. They will grow in full sun or in the shade.

Plant the bulbs in light, rich soil, four inches deep. They are increased from cuttings made square through at the junction of the leaf stem and the main stalk; but the novice should buy them from the florist if he does not wish to risk failure.

### GERMAN IRIS.

The German Iris, or Flags, is one of the most desirable early-spring flowering plants. The flowers are of

large size, four to six inches across, of the most exquisite colors and shadings. They require good soil to show up to the best advantage, and do still better when planted near water, in the edge of a pond. They are multiplied by division of the roots and by seeds.

Plant in rows, or six to ten inches apart.

### JAPANESE IRIS.

There are both single and double flowers of this, one of the most beautiful of our summer flowering plants. The colors range from white to deep violet purple, and some show shades of red. Their blooming period is six or eight weeks, beginning about June 15. They will thrive in any situation. If the soil is rich and moist, so much the better. The Japanese Iris is increased by division of the roots or from seeds.

### SPANISH IRIS.

The Spanish Iris is more delicate in growth and flower. The roots are bulbous. The blooms appear to be made of wax and are of various colors—blue, lilac, white, and yellow. These do best in light, rich soil. They will grow in sunlight or shade. This variety blooms in April and May. They are increased by offsets from the roots and by seeds.

All of the Iris family should be planted in the autumn; but if the Japanese Iris is planted early in the spring, it will bloom the same season. The seeds should be planted in April or May. If you wish to avoid possible failure, buy the plants from a florist or a nurseryman,

Plant all Iris from six to ten inches apart.

### LILIES TO PLANT IN THE SPRING.

The Auratum, Speciosum Album, Speciosum Rubrum, Speciosum Magnificum, and Tigrinum Splendens are hardy in the South, and do better when not disturbed. All of the other Lilies should be planted in the fall. Most of the Lilies are natives of the forest, and do best when slightly shaded.

This family of plants revel in a light, rich loam, and should be planted about three inches deep from the top of the bulb and eight to ten inches apart.

Lilies are usually increased by multiplication of the bulbs. With the Lilies that grow from roots, or corms, they can be multiplied by division, all of which should be done about July or August, and not disturbed for one year; but keep down the weeds and cultivate the ground thoroughly. Where immediate effect is required, always get bulbs from a florist.

### PÆONIAS.

These are the old-fashioned "Pinies" of our grandmothers' gardens. While still popular because of their early flowering, they have been wonderfully improved in recent years. They are the queen of spring flowers. They are well adapted to massing in beds or for planting in shrubbery, succeeding nearly as well in the shade as in full sunlight. All they require is a deep sandy loam and plenty of old rotten manure spread over them in the fall. They furnish a wealth of bloom for several weeks in May and June, rivaling the rose in colors and perfume. They should be planted in July or August. Set them from two to three feet each way.

### RANUNCULUS.

The *Ranunculus* should be planted in rich soil about the first of March in a partly shady place where they will get plenty of water. In a few weeks there will be a fine display of beautiful bloom that even the rose cannot surpass. They have no equal for late spring bedding, and are fine for cut flowers on account of their long, wiry stems. The colors are pink, white, black, yellow, blush, red, and variegated; large and double about three inches across; hardy. Cover in the fall with stable manure. Obtain roots from a florist.

### TIGRIDIAS.

These showy flowering bulbs look well mixed in with other flowers, especially with Lilies, *Gladiolus*, *Amaryllis*, etc. They flower freely through the summer. The stems reach as high as eighteen inches. They are hardy in the South. They require rich soil for the best results. The colors are yellow, crimson, and white. Purchase the roots from a florist.

All bulbs that are planted permanently in the flower beds should be set four or five inches deep, so that the surface can be worked over and other plants set out without injuring the bulbs that have blossomed in early spring and tops have died down and are at rest for the season, or there may be other bulbs planted in early spring that will come up and bloom amid the other plants that have been set in ground later. These bulbs—such as *Gladiolus*, Lilies, etc.—die to the ground, leaving the other flowers to bloom through the rest of the summer.

The following roots and bulbs must be planted in the autumn, as they make new roots in the fall and are prepared to withstand the winter, and also start growth under ground, ready to come up the first warm days. Buy the bulbs of a florist for best results.

### **LILLIUM CANDIDUM, ANNUNCIATION LILY.**

This Lily will not stand removing well. It must be set in the ground in August if possible, and must not be disturbed, as it improves with age. The flowers are snow white and have a delightful perfume. They should be planted five inches deep in rich sandy loam, and a few old dry bones placed a foot beneath them will make a great improvement in the growth and bloom. When planted in quantity, set them six to eight inches each way.

### **HYACINTHS, DUTCH.**

Hyacinths can be planted any time from July until October. The latest planting will bloom a few days later in April. These bulbs, when grown in quantity, are planted in beds, the bulbs placed from four to six inches each way. They will bloom well in any soil, but do best in a rich sandy loam. The colors are from pure white through all the shades to dark blue, red, salmon, and yellow. They are both double and single and delightfully perfumed.

The Roman and Dutch Hyacinths and Paper-White Narcissus can be procured of your florist.

The Roman Hyacinths are smaller and are more suited to greenhouse work; but if they are planted out of doors in October or November, they are not so likely to be injured by coming up in midwinter and having the bloom spoiled. Planted in window boxes on October 15, they

often do well when kept in a cool room. Plant them thickly in the box as close as one inch each way, and keep the soil damp. Place in a dark place until they have started good, strong roots. They will be in bloom by Christmas.

### PAPER-WHITE NARCISSUS.

The Paper-White Narcissus, when grown in pots or boxes, make excellent blooming plants at Christmas time if the bulbs are planted about October 15-20. When planted, they should be placed in a cellar or dark closet until well rooted; then they may be placed in the full light if desired.

All bulbs should be pressed firmly into the soil of the pots or boxes, but the top of the bulbs must be left above the top of the soil. This is always the rule for success in such work. They should be thoroughly watered when planted, but will require no more until brought to light in about ten or twelve days.

### TULIPS.

These flowers are of brilliant and varied colors and shades. Tulips are beautifully adapted for beds on the lawn, in the garden, and give a fine effect when planted half a dozen in a place among shrubbery and along hedges. They are strong growers and will take care of themselves for many years.

There are many varieties of the Tulip, both single and double, early and late.

When purchasing bulbs, a statement should be made in regard to colors and whether it is desirable that they all bloom at the same time.

Tulips will grow anywhere and in any soil, but will make a finer display when grown in good soil.

### NARCISSUS.

This is the flower of the poets. Just after bleak winter they turn our gardens and lawns in gorgeous array of gold and silver, with a fragrance that is enchanting.

There are many varieties of the Narcissus, both single and double. They are all hardy and need no attention after being planted. They will grow anywhere. They show best when planted in masses in groves, in shrubbery, and in clumps on the lawn. They are useful for bouquets and for vases, as they keep well in water in a cool room.

### SNOWDROPS, STAR OF BETHLEHEM.

The Snowdrops are not as conspicuous as some other flowers, but they bloom almost before the winter is gone, and give a cheery aspect to the lawn when their beautiful little star-shaped flowers are fully open, and they look well among shrubbery.

There is a larger-growing Snowdrop, with a large, drooping flower that is sometimes called "dead man's finger," that is also effectual when arranged among shrubbery.

They do best when grown in rich soil. Plant them three or four inches apart and one inch deep.

### CROCUSES.

Crocuses are among the first flowers of spring. They are so pretty and so cheap that they should be in every place in abundance. They show best when planted in masses of several dozen in the borders and a few placed



among the shrubbery, and they give a very charming effect when placed in the sod in the lawn two or three at a place. As they bloom and ripen the foliage before the sod needs trimming, there will be no harm done and they will come up each spring. When planted in clumps, they must be set two or three inches deep and the same each way. They will grow in any good soil.

### CHIONODOXA, GLORY OF THE SNOW.

The Chionodoxa is one of the most lovely spring-flowering bulbous plants, producing spikes of lovely bright-blue flowers, with pure-white centers. It is one of the earliest of all flowers, blooming before the Crocus.

The Chionodoxa should be planted in masses of a dozen or more to have them show to the greatest advantage. Plant them in fence corners, near the roots of large trees, and in the flower borders. Set them in good, rich soil two inches deep and two inches each way. They improve each year.

### AMARYLLIS.

The Amaryllis furnishes us with some of the grandest bloom that we have, the bloom averaging four inches. There are no pure-white flowers, but there are white with colored stripes through each petal. The colors are orange, scarlet, crimson, light rose, and almost white.

If planted in rich, sandy loam about seven inches deep, they are hardy in the South; and if not disturbed, they will improve each year; but they are more suitable for pots, vases, and tubs for house adornment. They do well even when they do not get much sun. The soil in the pots should not get dry in their growing season, as it will spoil the bloom. Put one bulb in a ten-inch pot

or six in an eighteen-inch-wide tub. When planted in pots or tubs, the bulbs should be only half buried in the soil.

### DAHLIAS.

The Dahlias are among the best and most beautiful of our late summer and autumn-blooming plants, and at the writing of this they are just now enjoying wide popularity. The double-flowered sorts are the most favored; but some of the single sorts are simply immense, being as much as five inches across, and are of the most beautifully tinted self-colors imaginable, being pure white, yellow, rose, red, maroon, and all manner of combination of mottling and shading into various colors.

Dahlias do best when not exposed to the noonday summer sun. The roots should not be planted in the garden until about May. Plant them five inches deep and eighteen inches apart. Buy established roots from the florist, and then you will be likely to get something satisfactory.

### ROSES.

We intend to be as brief as possible to give the reader an understanding of each class of roses mentioned, so that we may guide the prospective planter in choosing in an intelligent manner.

The old hardy roses—known as Province, Hybrid Chinas, Mosses, Briers, and Climbing—bloomed only in the spring and were literally covered with flowers; but since the improved sorts have become plentiful, the old sorts are not much in demand.

### HYBRID PERPETUALS.

This class does not bloom as freely as the Tea Roses, but the flowers of many are perfectly grand; and if the

bloom is cut off with the stem near the ground, that will often induce more growth and consequently more bloom. The plants of this class are nearly all rank in growth, and have rough leaves, and are very thorny. Instead of being called "perpetual," they should have been called "intermittent," as the most of them bloom irregularly; but quite a number bloom as well as some of the Tea Roses and are perfectly hardy.

### EVER-BLOOMING ROSES.

This class is easily distinguished by its more delicate and glossy leaves and stems. There are about four subclasses here—namely, Noisette, Tea, Bourbon, and Bengal. Some sorts are rank growers; others are of dwarf habit; such are most of the Tea class.

The Tea Roses are often killed to the ground in severe winters in the South, but will put up again. It is a good idea to cover Tea Roses with old straw leaves or manure in December and trim the bushes to the ground in March.

The most satisfactory way to propagate the Rose is by cuttings placed in a damp, cool place in the early summer; or in August, in the window box, set in the sun and kept soaking wet; or before heavy frost set pieces about six inches long thickly in a protected corner in the garden. Bury them to the top bud. By April many of them will be rooted.

The Rose thrives best in a rather stiff clay soil, and the colors are richer.

Hybrid perpetuals must be planted not closer than two feet each way. The Tea Roses can be placed as close as eighteen inches.

To prepare a bed for Roses, a good plan is to remove

the soil to one side to the depth of ten or twelve inches, mixing the same with one-third of well-rotted cow manure, forking it over several times to thoroughly incorporate the compost, in the last turning it into the bed proper. This should be done in dry weather, when it can be tramped down to firm the soil without packing it. If the soil taken from the bed is poor, it should be rejected and good clay loam substituted, or well-rotted sod from an old pasture can be used with excellent results.

### A Few Don'ts.

Don't be forever working your rose beds or shrubbery, as they do not need deep cultivation, and you may do them more harm than good by breaking the young fibers or working roots. Keep the weeds cleaned out, and break up the crust that forms on the surface, using a light hoe.

Don't trim annual blooming roses at all; only cut out the dead and undesirable wood.

Don't let your flower beds get out of shape. Trim the ends that seem to be growing out of order. This will benefit all soft-wooded plants, and many hardwood plants are improved in shape by trimming off uneven ends.

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The following is a good assortment of summer decorative plants for the lawn:

### COLEUS, IN SOLID BEDS.

The Coleus, with their brilliantly vari-colored foliage, make beautiful beds. Either when used for ribbon beds or when used in solid beds of one color, they produce a

most pleasing effect. They must be obtained from a greenhouse, as they must be several inches high when planted for immediate effect. Water copiously when planting.

The *Coleus* delights in a rich loam, with a moderate amount of water and plenty of warm sunshine, and will do fairly well in the shade. When they show the bloom, pinch it off, and the plants will be improved thereby. The colors of *Coleus* leaves range from white to green and velvety crimson and black, with all kinds of marbling and splotching.

The *Coleus* will not stand frost. Plant twelve inches apart.

### GERANIUMS.

Fish Geraniums have always been the main standby for summer bedding, considering their ability to stand drought and a little frost, thereby remaining in good condition later than most other plants used for such purposes.

The Geranium is undoubtedly one of the most continually floriferous of all decorative bedding plants. It will grow in the shade or in full sunshine.

It is best to get stock from the florist, so that you may choose the colors and varieties desired. Plant from ten to twelve inches apart.

### NASTURTIUMS, IN SOLID BEDS.

Any one who has planted a bed of Nasturtiums will realize at once that we are recommending one of the prettiest low-growing bedding plants extant. They are grown from seed planted about the middle of April or first of May. Place a seed or two seven inches each way

in poor soil. You will then have more bloom and not so much foliage.

This plant withstands drought remarkably well. The foliage is very attractive, and the flowers are intensely bright and attractive and are borne in profusion the whole summer if no seeds are allowed to remain on the plants.

### **PETUNIAS, IN SOLID BEDS.**

This annual is admired by many, and rightly so. There are many high-priced plants that do not make any better show than the Petunia. All that is required to keep up a continual succession of bloom until freezing weather is to pinch off the ends of the branches about once a month to induce new growth. They will grow in any soil, in full sun or in the shade.

Sow the seed broadcast in the bed and rake the soil well to cover the seed. The plants will thin themselves. All that is required is to keep the weeds in check until the plants cover the ground.

The above has reference to the single varieties. It is better to get the double sorts in plants from a florist or greenhouse, as there is an uncertainty about the seeds of double sorts.

### **VINCA, OR PERIWINKLE, IN SOLID BEDS.**

This is a lovely bedding plant of modest appearance, but so reliable, producing in profusion its bright pink and white flowers from early summer until frost, thriving in any good soil. The plants must be set in the bed about nine or ten inches each way. Give them plenty of water when planted, but they stand drought well and will need no water all summer.

Vincas are easily grown from seeds; but for early sum-

mer bedding it is best to get plants from a greenhouse, as the plants have been started early and are ready to bloom when planted in the beds.

### **SALVIA, OR SCARLET SAGE, IN SOLID BEDS.**

The *Salvia* is a favorite and fashionable standard bedding plant of the greatest merit. It stands heat and drought remarkably well. It blooms in the most lavish profusion from the time it is set in the bed until cut down by frost. The flowers are of the most intense scarlet imaginable.

Salvias should be grown in good soil. Seedlings are not to be depended on. Get the plants from a greenhouse. They are then well advanced and will bloom at once. Set the plants when grown in solid beds from twelve to fifteen inches each way.

### **LANTANAS.**

The *Lantanas* are among the most floriferous plants in cultivation, and are easily grown. They begin to bloom when only a few inches high and continue to bloom until frost. The colors are white, yellow, orange, pink, rose, scarlet, etc. Nothing is more satisfactory than this for the garden or for pots. They make a fine display when made into beds of one sort only, as some varieties grow taller than others.

*Lantanas* will thrive in any soil or situation. The most satisfactory plants are to be obtained from a florist.

### **TRITOMA, OR RED-HOT POKER, IN SOLID BEDS.**

The Hardy *Tritoma* comes with some of the newer plants; but we have tried it, and find it very fine as a

permanent bedder, improving year by year, blooming incessantly from early summer until December. Nothing but a freeze will stop it from blooming. The flower stalks are about two feet tall, crowned with a large spike of the most dazzling orange and scarlet flowers imaginable.

Tritomas thrive best in a deep sandy loam. When freezing weather comes, cover the bed with about three inches of well-rotted manure. To meet with success in growing this plant, get the roots from a reliable florist, and plant them so that the crown of the roots will be two inches below the level of the bed and ten to twelve inches apart.

### **SALPIGLOSSIS.**

The Salpiglossis is a very fine and brilliant bedding plant. It has fine, large, bell-shaped blossoms of velvet-like texture and with deep veins and pencilings on a groundwork of the most pleasing colors of red, white, blue, purple, yellow, etc. This is an annual, and must be started early if wanted for early summer bedding.

Sow the seed in the permanent bed on April 15, and leave a plant ten inches each way. They will thrive nicely in any good garden soil.

### **DUSTY MILLER.**

The Dusty Miller is indispensable in the designing of flower beds where contrast is required. The plants being white, they will contrast with anything. They make a most striking finish to the outer edge of beds of taller growth of dark colors; and another thing that recommends them is the fact that they are not partial to any particular soil or location.

When used as a border, set the plants five or six inches



apart, so that they will make an unbroken line. Get these from the florist, as it would be impossible to grow them from seed sown out of doors. They are used mostly as an edging for other plants.

### ALTERNANTHERA.

The *Alternanthera*, in the hands of a tasty gardener, can be made into the most unique and charming designs. Its low growth and beautiful tinted leaves of green, pink, red, and yellow, and the ease with which it can be kept in order, render it a most desirable foliage plant for many decorative purposes. They are commonly used in carpet bedding or for edging flower beds.

Set these plants about four inches apart, so that they will form a compact line.

### GAILLARDIA, IN SOLID BEDS.

Both annual and perennial *Gaillardias* are splendid bedding plants. They are remarkable for the profusion, size, and brilliancy of their flowers. They are in bloom from June until November. When set in a solid bed ten inches each way, they form one solid mass of orange-red flowers. They must be planted in good garden soil in April or early May.

The best plan to start an early bed of *Gaillardia* is to buy the plants from a greenhouse; but if seed are used, sow them in March in the bed they are to grow in and keep the weeds down until they cover the ground. They grow about fifteen inches high. To make them bloom more profusely, pinch off all of the seed.

### **RICINUS, CASTOR OIL BEAN, FOR DECORATIVE WORK.**

This stately annual gives a fine tropical effect when grown in clumps or in centers of beds with other foliage plants surrounding it. There are several varieties—some that grow as high as twelve feet, others that are a little more than a yard high. The different varieties are of various colors—green, bronze, coppery brown, and brownish purple. The leaves of some varieties are all two feet broad. They thrive best in a deep, rich loam.

These plants are grown from seed planted in April where they are to remain. They are subtropical plants, and are easily killed by frost.

### **CALADIUMS, ELEPHANT'S EAR, IN SOLID BEDS.**

There are a number of varieties of the *Caladium* family, but the one of greatest utility for large beds is known as "*Caladium Esculentum*," being the largest of all and the easiest to grow. It gives a grand tropical effect to the premises. When given plenty of water and old, well-rotted stable manure placed on the surface after planting, these plants will grow six or seven feet high, with great shieldlike leaves three feet long and nearly as broad. As the roots are easily spoiled by the frost, they will have to be gotten from the florist. They are then in good order and will grow at once. They can be planted in the bed about April 15, and should be set two inches below the surface. When the weather becomes dry, give them plenty of water.

**ABYSSINIAN BANANA, MUSA ENSETE.**

This is one of the grandest and most stately of all the rapid-growing tropical plants used in the Temperate Zone for decorative effects in the open. When the hot summer days arrive, it grows rapidly and attains gigantic proportions, producing a fine tropical effect on the lawn. The leaves are superb, very long and massive, of a beautiful shade of green, with a midrib of red. The plant will grow as tall as eight feet in a single summer.

This *Musa* must be grown from seed started in the greenhouse in March and planted on the lawn about the first of May, in very rich soil, in a slight depression that will hold several gallons, into which pour several large buckets of water every evening, and about once a week give a bucketful of liquid manure.

**CANNAS, IN SOLID BEDS.**

Cannas give a fine tropical aspect to the surroundings of a home. When only one sort of the large flowering varieties are used in beds, they look much better and are more even in growth. They are popular, and are among the most brilliant of summer bedding plants. They have no insect pests, and rarely ever fail to grow luxuriantly, and are in bloom in a few weeks after planting the roots. They will grow well in any soil, but will thrive best in rich, moist land. The colors of the bloom range from creamy white through various shades of yellow, orange, scarlet, and crimson; and the foliage is light and dark green, light and very dark bronze. Some plants are only a few inches high, while other plants will grow as tall as seven feet.

Canna roots should be set one foot each way and three inches deep. The roots should be gotten from the flo-

rist, as they are in better condition and all of them will be sure to grow.

### ARUNDO.

There are two kinds of the Arundo used for massing on the lawn or in the garden—the tall green, that grows as high as ten or twelve feet, and the variegated, which grows only six or eight feet tall. The latter, being the most beautiful, is the one generally in use. The leaves are striped, creamy white, and green. This plant shows to fine advantage when planted in groups of five or six roots at a place. They require rich soil, and do better when planted in a damp place or on the side of a pond. They are perfectly hardy and improve year by year, growing in sod with no cultivation.

The Arundos will have to be obtained from a nursery, and should be planted in April or May. Place them four inches deep and two feet between plants.

### TUBEROSES.

Tuberose are among the most beautiful of our summer-flowering bulbs, and have the most delightful perfume imaginable. By proper management they may be had in bloom all the year through.

For blooming in the open border, plant the first bulbs about April 20 and then every two weeks until about June 1. A few may be planted with good results in a general mixture bed. When grown in quantity, they should be planted in good garden soil not nearer than ten inches each way and about three inches deep from the neck of the bulb to the surface. Remove all side shoots.

There being several varieties of the Tuberose, it is well to consult a florist as to the best varieties for the

section in which it is desirable to plant, and also for what purpose they are intended. Some are single-flowered, others are double-flowered, and one variety has the foliage beautifully striped with green and white.

### YELLOW DAY LILY.

These plants are popular, and justly so, as one kind or another is in bloom from June until September. The flowers range in colors from a beautiful lemon yellow to orange and coppery yellow, also blue. The most of them are delightfully sweet-scented. They grow about two feet high, bearing quantities of bloom when well established, and will thrive in any kind of soil, but should be covered in November with two inches deep of old stable manure.

The plants must be set in April about two inches deep from the crown or bud. They are hardy and need little protection in winter. Procure the roots from the florist.

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The following are plants that will grow in the shade:

### PLANTAIN LILY, FUNKIA.

These are among the easiest of plants to grow; and if they did not bear any flowers, the broad mass of deep-green leaves are very ornamental. The flowers are beautiful shades of blue, lilac, and pure white, the white being delightfully fragrant.

The Plantain Lilies thrive best in rich sandy loam. The flowering time is August. The roots must be set in March, with the crown level with the ground.

The Funkias are all hardy and require no protection.

These plants are often used as vase and tub plants with fine effect. They should be purchased from a florist.

### VIOLETS, ALL SORTS.

The habitat of the Violet is in shady nooks and in the forest. They will grow in any soil if there is even a thin layer of forest mold, or in cultivation old stable manure sifted over the plants just after being set out is a good substitute. Some of the varieties are in bloom several times in spring, summer, and fall; but the flowers are very indifferent in warm weather.

Violets must be set five or six inches each way; or when in rows, set them about six inches apart. All Violets are hardy. For early or winter blooms, plant in cold frame and give plenty of air on warm days by raising the sash a little.

### LILY OF THE VALLEY.

It is a rare thing to see a real good specimen of the Lily of the Valley. They are usually badly set in the bed in soil not suited to their needs, and consequently they produce poor bloom. This plant repays good treatment.

Place the plants in rich sandy loam in March or April, and spread on the surface two inches of old, well-rotted stable manure. There will be a marked difference in the increased size and number of the bells, as well as the more vigorous condition of the plants. Place the roots straight down in the ground, with the crown one inch below the surface of the soil. They are as hardy as an oak, and improve for years before resetting.

Lilies of the Valley must be planted in a situation where only the morning or late evening sun will fall on them.

### HARDY FERNS.

There are probably a dozen or more desirable hardy Ferns that are suitable for the shady situations about the home.

Ferns should be planted in rich, well-drained soil, and the foliage should be liberally sprayed in dry weather to keep them in a thrifty condition. If leaf mold can be had for the bed, place thereon about one inch deep, and they will grow much finer. Where several varieties are planted in a large bed, it would be a difficult matter to give the space between the plants; but a good average would be about ten inches each way. Cover the bed about three inches deep with leaves or straw about November.

These plants will have to be gotten from the green-houses, as some of the most beautiful are not native in the South.

### MONEYWORT, OR CREEPING JENNY.

The botanical name of this creeper is "*Lysimachia*." It is very valuable for shady places and under trees and shrubbery, where it soon forms a dense carpet of deep green. It will grow where grass will not, in poor or rich land.

A piece of the vine can be cut into single joints and placed ten or twelve inches each way, and every piece will grow and soon cover the ground. It is perfectly hardy, needing no protection in winter.

### LOBELIA.

This pretty, floriferous little plant does nicely when grown in the shade. It is best to get well-matured plants from the florist. By this means the bed is sooner

in order. If seed is sown in the bed, it should be done in April.

Lobelia of any sort will grow in good garden soil, but will grow more robust and bloom better in rich soil. The colors are blue, red, and white; but the blue colors are usually preferred for bedding purposes. The plants should be set in the bed about four inches each way to make a solid mass.

Lobelias will not stand much frost, and should be protected on cold nights until the weather is settled; and we should not forget to state that there is no little plant more lovely when arranged in vases, swinging baskets, and rockeries than the Lobelia.

### PLUMBAGO.

This is also recommended as useful for shady places. There are two sorts that are the most popular of the shrubby varieties—the blue and the white. They are often planted in the garden, but are considered a good vase and tub plant and are more commonly used as such. The flowers are single, the individual flowerets being about three-fourths of an inch in diameter, and are formed in clusters about three or four inches in diameter. They flourish best in cool, moist places. These should be gotten from a florist and the roots disturbed as little as possible when transplanting into another vessel. If several are set together in the garden, they must be arranged about twelve or fourteen inches each way. They grow about twenty inches high.

### GERANIUMS, GOLD AND SILVER-LEAVED.

The Geranium family being too well known to require cultural instructions, we will only state that they can



be successfully used in shady places, especially the variegated-leaved varieties.

### BEGONIAS.

The whole Begonia family are most excellent for shady nooks, whether it be under a bluff, in the grove, or at the north side of a dwelling. Their native habitat is high in the mountains of tropical America, in a cool, moist atmosphere just below the frost line.

Treating of plants suitable for growing in the shade leads up to the subject of the proper care of plants that are being grown indoors in the winter months for the decoration of the home. Such plants require careful watering so as not to render the soil real wet, merely damp. If kept wet in a temperature of over sixty-five or seventy degrees Fahrenheit, the plants will be forced into a rapid, unhealthy growth. Such plants as are intended to bloom in a dwelling room should be kept as close to a well-lighted, sunny window as possible, a southern or southeastern exposure preferred. Nearly all indoor plants will keep in good condition in a temperature of from forty to fifty degrees Fahrenheit.

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The following are plants that can be used with excellent summer decorative effect when planted in vases and tubs on the veranda or on the lawn:

### FERNS.

Ferns of the large type are used more than any other plants for the decoration of the house on account of

their very graceful and drooping habit. Some varieties stand the sun remarkably well and are much used on the lawn and in the garden.

Ferns are partial to moisture and should be sprayed on the foliage every evening about sunset. This keeps them in good condition. A weak solution of lime is beneficial when poured around the roots. This gives them a needed stimulus, and also drives out all worms that may be in the soil.

Plant all ferns in good garden soil, placing one inch of well-rotted stable manure on the top of the soil after the plants are set.

### ASPARAGUS.

The *Asparagus Plumosis* is a most beautiful and graceful plant, one of the best for the home, as it will live under the most adverse conditions if it only gets a little water occasionally; but if given good treatment, it is a thing of beauty and a joy all summer and a large part of the winter, as it is almost hardy enough to grow outside.

Some varieties of this plant have fine feathery foliage; others have the most beautiful lacelike foliage that has the appearance of having been pressed flat. When these plants show an inclination to make a vine or runner, the end should be pinched off. This will cause a compact growth that adds to its beauty.

### ASPARAGUS SPRENGERI.

The *Asparagus Sprengeri*, or Emerald Feather, is a most beautiful vase and swinging-basket plant, and can be used in the window box with fine effect. It is of a beautiful shade of light green, of drooping habit, pro-

ducing sprays three feet in length, and often well sprinkled with coral-red berries.

All of the *Asparagus* family delight in a rich sandy loam, with plenty of water.

### CALADIUMS IN TUBS.

All varieties of the *Caladium* family are good for growing in tubs and vases when they can have plenty of water and very rich soil. The large sorts of the Elephant's-Ear type are usually too large for the veranda; but the fancy-leaved varieties are smaller and can be grown in large pots, vases, and tubs about the house. The fancy-leaved sorts require some sunlight to keep them in good health. The colors and markings of these beautiful plants are endless.

As these *Caladiums* are of a tropical nature, they must be started early in a hothouse, about March, and should not be placed outside before the first of May. Never water *Caladiums* until about sunset. The leaves will then not be sunburned. When the leaves begin to die in the autumn, give them water sparingly for a few days, then let them dry up in the tub, then place them in a dry, frost-proof place until next spring. Several fancy-leaved varieties may be placed in a half barrel, as they are much smaller than the *Caladium Esculentum* variety.

### CALLAS, LILY OF THE NILE.

Nearly every one looks upon the *Callas* as greenhouse plants, but they will grow anywhere outdoors all summer until frost. They make real nice tub or vase plants when a half dozen or more roots are planted together. The dry roots should be rolled in air-slacked lime before

being set. They are then not likely to rot, and the lime is a good fertilizer.

Plant them in rich soil, pressing the soil firmly around them with the top of the root half an inch beneath the covering.

There are a number of varieties of the Calla—tall and dwarf. The blooms are pink, yellow, sulphur, and white. The last is the kind generally used by the florists. They are not hardy.

### BEGONIAS.

The Begonia family is a numerous one, and nearly all are useful for the business in hand. For small vases and large pots the Rex varieties are the most suitable, being of a low-spreading habit, with broad, beautifully marked leaves in silver and green, red and bronze. Those suitable for large vases and tubs are known as "Fibrous-Rooted Begonias." Some of these will grow six or more feet high. The leaves of these are very ornamental and produce lovely flowers—white, pink, and coral red, according to variety.

All of the Begonias revel in a rich, moist sandy loam, in a shady situation. Never allow any moisture to get on the leaves; it spoils their appearance. They will not stand frost, but will do well in a cool place. They should be gotten from a florist.

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There are hundreds of fine flowers of old, well-known varieties, both hardy and tender, that would furnish the most beautiful decorative effects and would please the most fastidious. Our intention has been to give the best known and the easiest to manage of the old and a

few of the newer kinds—plants that have proven to be good bloomers and also for foliage effects.

Until now we have not mentioned any of the Palm family and a few other plants that are of slow growth and more costly and have to be wintered in a greenhouse or dwelling room where no frost can enter. We will mention a few of the most hardy against heat, cold, and dust.

### **CYCAS REVOLUTA, SAGO PALM.**

This Palm has heavy, glossy, deep-green, graceful, fernlike foliage, and is one of the best decorative plants for both house and lawn. This plant resists dust, gas, and cold, but will not stand hard frost.

### **LATANIA BORBONICA.**

This is of the easiest culture, developing large, deeply divided, fan-shaped leaves of remarkable beauty, withstanding dust, gas, heat, cold, and some drought without serious injury; but it should be watered very little in winter. It is a good indoor plant.

### **KENTIAS.**

These Palms are all reliable for house and lawn decoration. The foliage is of the fan-shaped type, but is cleft to the stem. There are several varieties of this. It does best outside in tubs.

### **PHŒNIX CANARIENSIS.**

This is a Date Palm and is highly ornamental. It has long, graceful, pinnated or fernlike leaves and makes a good tub plant on the lawn, and will stand some rough treatment indoors for several weeks without sunlight.

Plant these in any good garden soil mixed with a little sand to keep the soil from getting hard in the tub. Give liquid fertilizer or a little bone meal worked in the top soil three or four times during the summer.

### ARECA LUTESCENS.

This is a graceful, soft-foliaged Palm—one of the most beautiful in cultivation. The foliage is a bright, glossy green, with rich, golden-yellow stems. This Areca grows about four feet in height.

### COCOS WEDDELIANA.

This is the most graceful of all the small Palms. The growth is very slow, but they hold their beauty a long time. Its slender, erect stem is freely furnished with gracefully arching leaves of a rich, bright-green color. It is well adapted to house culture, standing extreme heat and cold as well as dust and gases of the furnace. This Palm grows only about eighteen inches tall.

### RUBBER PLANT.

The variety known as "Ficus Elastica" is the best for house decoration. This variety grows rapidly, and has large, beautiful, glossy, deep-green, oval-shaped leaves about eight inches long.

Rubber plants require about the same treatment as the Palms, withstanding many hard knocks without serious injury. Sometimes the old leaves fall off; this is natural; but if new leaves do not put forth in a few days, apply a little liquid fertilizer, unless the tub appears to be full of roots. In the latter case transfer to a larger tub.

### ASPEDISTRA.

This is not a Palm, but there is more real satisfaction to be gotten out of it than any plant we know of for use about the house. It does not seem to require sunlight at all. It will grow on the hearth, mantel, in the farthest corner from the light, growing all the time. There are two varieties—solid green and striped white. Both are good pot plants. Give them good, loamy soil and plenty of water, and there will be nothing more required of you.

### PANDANAS.

There are two varieties of this plant suitable for decorative purposes indoors or outdoors. One kind has bright-green, long, swordlike, saw-toothed leaves in a spiral around a single stem, and on that account is often spoken of as the "screw pine." The other variety has the same general appearance, but is broadly striped with creamy white. They grow here in the greenhouses to reach the height of seven or eight feet.

There is no better plant than the Pandanas for table decoration as a centerpiece surrounded by ferns or other suitable material.

### ARAUCARIA EXCELSA.

This is sometimes called "Norfolk Island Pine." It is a most beautiful and desirable plant for well-lighted hallways and verandas. It is more hardy than it is generally supposed to be. The branches are arranged in tiers in a most pleasing and graceful manner. It succeeds best in a moderately rich sandy loam, with a few well-decayed old bones in the bottom of the pot or tub. Keep the soil damp at all times. Every few days shower well the under side of the leaves to wash off the red

spider that may harbor there. He is a minute insect that can hardly be seen, but he will cause the plant to turn brown and spoil it.

The Pines will make big trees in their native habitat; but when grown in pots, they do not get very tall—about six or eight feet.

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We have given you a list of flowers and foliage plants for general planting, also special bedding plants and a few of the best foliage stock for house and lawn decoration. We will now add a few of the best flowering plants suitable for the ornamentation of the home throughout the winter months, specifying those for the holidays. These plants should be grown and kept in the greenhouse until in full bloom, as the ordinary room is not suitable for the best development of such stock. They will remain in bloom many weeks if not allowed to get too dry or to get frozen.

For Christmastide, the Easter Lilies, Cyclamens, Chinese Primrose, Poinsettias, Eupatoriums, Azaleas, Callas and Roses in pots, Roman Hyacinths, paper-white Narcissus, and other plants can be used.

For Easter, Easter Lilies, Azaleas, Fuchsias, Begonias, Geraniums, Abutilons, Heliotropes, Cinerarias, Perennial Balsams, Forget-Me-Nots, Alyssums, Hyacinths, Bouvardias, and many other plants are in bloom at this time. As spring is at hand, there is a wide range of blooming plants to choose from.

For Thanksgiving Day and until Christmas, there are a number of good blooming plants in the garden that can be placed in large pots or tubs.

In removing plants from the garden that are in bud or bloom, be careful to remove the soil from around the



plant to be transferred, leaving a solid ball of earth around the roots. Place earth enough in the bottom of the pot or tub to bring the top of the ball an inch or two below the level of the rim of the receptacle, so as to leave room for the watering of the plant. This ball of earth must almost fill the vessel, leaving only a small space to be filled with soil, which should be pushed down firmly, after which water thoroughly and move to a shady place, giving no more water for five days. Afterwards move into the full light until the weather gets cool. Do not let frost fall on them, as the bloom may be damaged. There are no more satisfactory plants for this work than Chrysanthemums, Cosmos, Geraniums, and Cannas. They are rather weedy in nature and will stand much bad treatment without being killed.

A real old-fashioned grandmother's garden, such as we have seen in our childhood, would be to the children of this time a real wonderland, in the general abandon with which the flowers were intermingled with shrubs and evergreens, crab-apple trees and dwarf fruit trees laden with fruit, the trees often not taller than a small boy. In those wonderful gardens you would see Love-Lies-Bleeding (Weeping Amaranthus), Hollyhocks, Ambrosia, Yellow Lady's Slippers, Old Maid's Pinks, Bachelor's Buttons, Touch-Me-Nots (Balsams), Ragged Sailors (Centaureas), Love-in-a-Mist, Heartsease, Altheas, Columbines, Morning-Glories, Sweet Williams, Cowslips, etc. At a glance the impression made would be that Dame Nature in her most tasty mood had just dropped all of those plants there for the admiration and wonder of man.

## HARDY WATER LILIES AND OTHER AQUATICS.

There is no work in the realm of floriculture that is more interesting than the preparation of ponds and aquariums, and there is hardly anything that furnishes more pleasure than the observation of the development of all manner of aquatic life in a well-arranged piece of work in this line.

There are more than fifty varieties of the hardy Water Lilies. The colors found among them are white, pink, red, crimson, and yellow, with combinations of these colors. They all have beautiful anthers, or centers, in colors from light yellow to dark orange and rarely of a red tint.

There are two ways to prepare a Lily Pond. One is to remove the soil to the depth of two feet, leaving a flat bottom and the sides at an angle of forty-five degrees. If there are soft places in the ground, remove the earth and tamp clay firmly into them. Take hydraulic cement in the proportion of one of cement and three of sharp sand, and of this place a coat on sides and bottom to a thickness of not less than a half inch, and allow it to stand three or four days before turning in the water. The cement must be used at once when mixed, as it soon sets and is worthless. After a few days, the tubs with the Lily roots may be placed in the pond. The soil for the tubs should be one-half rich loam and one-half rotted cow manure. The roots should be procured and set between April 15 and May 1 for best results. The other method of planting is to set the Lily roots directly in the soil in the bottom of the pond. The soil is the same as for the tubs, but is placed six to ten inches deep over the entire bottom, and the roots are placed from two to

four feet each way, according to the size of the plant. When only one or two plants are required, a barrel may be cut in two and set in the ground or on the surface, filling the tubs two-thirds full of the pond soil; and fill with water, keeping the tub always full, and keep in full sunlight or in a slightly shaded place.

Apply to a grower of aquatics to ascertain the best varieties for such work as you wish to perform.

### PLANTS RECOMMENDED AS BEST FOR AQUARIUMS FOR THE HOUSE.

We will have to give both the botanical and common names of some of these plants, as it is likely that an appeal will have to be made to a grower of aquatics for a supply of this stock.

We will first mention the plants that grow in the soil with the foliage above the water: *Cyperus Alturnifolius*, *Limnocharis Humboldtii* (or Water Poppy), *Myriophyllum Proserpinacoides* (or Parrot Feather).

The following plants float on the water: *Eichhornia Crassipes Major* (or Water Hyacinth), and *Salvinia Braziliensis*.

Those mentioned below live under the water: *Vallisneria Spiralis* (Eel Grass, or Wild Celery), *Sagittaria Natens*, *Columba Viridifolia* (Washington Grass).

There are other plants to be had, but these will be found to suit all ordinary requirements. Any one who grows aquatics can furnish these plants. If there is no one growing aquatics in your neighborhood, your nearest florist can direct you to some one in that line who can furnish what you may require.

With the exception of the Water Hyacinth, the aquatics should have some soil on the roots. This can be

managed so as not to muddy the water by either placing an inch of rich soil on the bottom of the small aquariums, setting the plants therein, or by placing the plants in pots two-thirds full of soil, or by using other receptacles used for such purposes, then filled partly with soil. After setting the plants therein, fill the pots or other receptacles with clean sand that has been washed, or cover the soil on the bottom of the aquarium with about one inch of clean sand. Place a flat vessel on the sand in the aquarium, on which pour in the water slowly. When finished, the water should be perfectly clear. A few bright pebbles or shells may be dropped in, then put in the fish.

To clean out the aquarium without disturbing the contents, use a one-fourth-inch piece of rubber tubing two or three feet long. Suck the same full of clean water, holding both ends. Place one end in the aquarium, passing over the bottom to pick up the refuse. The other end of the tube, being lower than the bottom, will carry off the dirty water. Once or twice a month is often enough to replenish the water when there are plants growing therein. If a heavy growth of moss forms on the bottom, that will aëreate the water sufficient to sustain the fish; but if the fish should stay on top very long at a time and appear to be sucking air, they should be given fresh water and a little broken crackers, but no more than they will eat up clean in an hour or two. If the fish appear to be sluggish for several days in succession, place them in salty water for a few minutes. This seems to be a good tonic at such times. If their bodies seem to be very much swollen, about five minutes' time spent in one quart of water, into which one teaspoonful of common table salt has been added, will cause them soon to show a more lively disposition. This

treatment will keep them in good health if repeated once or twice a month.

No one should kill the toads because they use the lily ponds for breeding. The toad is one of the best friends than man has. Unfortunately, so few are aware of the millions of harmful insects destroyed in a season by a single toad. To keep toads from the ponds, place a light, small-meshed fence about one foot high around the pond; or, better still, when cementing the pond, place a rim of cement twelve inches high, with a slight lip turned to the outside so they cannot climb over.

### WINDOW BOXES.

In this work we have often mentioned the use of window boxes to start seeds of such plants as would be wanted for early planting.

A convenient size for a window box for starting seeds for early use should be twelve inches wide, about twenty inches long, and six inches deep. Place four inches of rich earth in it. Make it level. Firm it down with a piece of board, but do not pack it hard. Use a square stick that will easily go in the box crossways. Turn it on one corner and press into the soil, thus making small trenches, into which sow the seed. Cover lightly. Turn the stick flat and press down the soil lightly. Wet the soil thoroughly. Place a glass on top to retain moisture and keep out possible light frost. These boxes should be kept in a moderately warm room and set close to a sunny window. On pleasant days they may be set on the open window sill and a stick placed crossways under the glass to give fresh air and keep the sun from burning the plants with the vapor forming under the closed glass. A window box for summer use should be only

ten inches wide, in which all manner of summer plants may be grown.

### COLD FRAMES.

The construction of cold frames is very simple, and they can be made by any one. Have two boards six feet long for the sides and two boards three feet long for the ends. These boards need not be more than eight inches wide. Nail all four corners securely. Level the ground where the frame is to be. Set the frame on the surface. Fork up the soil inside, making the soil mellow, and you have a cold frame ready for the seed or plants. Place a three-by-six hotbed sash thereon when the weather is cold, and place a brick on end under the farthest side from the wind when the sun is warm, or the plants will be killed from overheat.

## FRUITS.

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In dealing with the subject of fruits, we propose to do so in a general way, mentioning the methods best adapted to the wants of the small grower without giving the varieties. It is best for the planter to consult the nurseryman in regard to the varieties best suited to his particular locality and soil.

### APPLES.

Apple trees vary considerably in form; but when only two or three rows are to be planted, they may be set as close as eighteen feet each way without overcrowding. When planting apple trees, the top should lean a little to the southwest. If this is done, the hot summer sun will not burn the bark and weaken the trees. Dig the holes not less than one foot deep by two feet wide, placing the top soil on one side of the hole and the bottom soil on the other side. When setting the trees, be sure not to place them any deeper than they were when in the nursery rows. Place the soil that came from the top among the roots, leaving no air spaces, firming the soil well with the hands; then finish with the soil that came from the bottom of the hole and tramp it down solid. If the trees are five or six feet high, it would be well to drive a stout stake about three feet high, to which fasten the trees with soft cord until the roots have gotten a firm hold. The apple does well in heavy clay or in rocky limestone soil.

Apple trees do very well when planted in February, but will make some root growth through the winter if planted in November, thereby getting a better start than those set out in the spring.

### PEARS.

Pears will do well with the same treatment and soil as the apple, but the standards can be set as close as fifteen feet each way. The dwarf pears can be set as close as six feet. Cut off the top to two feet and cut off all side limbs, and there will be no need to stake them. Trim one-third of the tops every year or two for better fruitage.

### PEACHES.

For best results, the peach should be grown on well-elevated situations, the north side of a hill preferred, as that situation is cooler than the south side, and on that account the sap does not flow soon enough for the fruit to be killed by a February freeze. The best soil is a sandy loam or a fertile gravelly land.

When planting peach trees, cut the top off one foot from the ground. In so doing you encourage a low, spreading tree, from which it is easy to gather the fruit. The trees may be set as close as fourteen feet each way.

Peach trees can be set in November, but we prefer planting them in February and March.

### PLUMS.

Plum trees will grow anywhere and make an abundance of fruit every year. They are not particular as to soil.

Plant plum trees in November, February, or March. Set the large-growing trees fifteen feet each way, trim



off the limbs, and cut the top off about two feet from the ground. The dwarf, or Japanese, varieties can be planted as close as six or seven feet.

### DAMSON.

The damson belongs to the plum family and requires the same treatment, but may be planted two or three feet closer, as they grow more upright.

### CHERRIES.

When cherry trees are planted in rich soil, they often grow very large, sometimes as high as twenty-five or more feet and as much across; but it requires many years to make such a growth. They may be set eighteen feet each way.

Cherries will do well in any good garden soil. They can be planted any time in the fall or early spring. Trim to a straight stem, and cut off the top at three or four feet from the ground.

### GRAPES.

Grapevines are of the easiest culture, and are often used as screens, trained in front of porches and on arbors. The best way to grow them for fruit is on the vineyard plan. Set in checks seven feet each way and support by stakes not over six feet high. By this method the vines can be easily worked over, and the fruit is easily harvested.

Grapevines should be trimmed late in the autumn, after the sap has ceased to flow. All of the year-old wood above four or five feet from the ground should be cut away, leaving about two or three buds on the new growth. The vines from these two or three buds will produce an abundance of fruit. When trained over a

trellis, cut out most of the old wood and cut off two-thirds of the new growth.

### BLACKBERRIES.

The wild blackberries are greatly improved by cultivation, but the improved varieties can be had cheap enough to justify growing them in quantity in the garden.

Blackberries will flourish in the poorest of soil if a little old stable manure is thrown about the stems in the fall. The land should be prepared the same as for corn. It should be broken up in October and the plants set at once. Lay off the rows five feet apart and set the plants two feet apart in the rows. In the fall trim the stems to four or five feet. The fruit is produced from the lateral shoots that form in the spring.

### RASPBERRIES.

Raspberries require much the same treatment as the blackberry, but can be planted closer. Make the rows four feet wide and set the plants eighteen or twenty inches in the rows. Cut the tops back to two feet in October or November. All shoots that come up between the rows should be treated as weeds unless wanted to plant elsewhere.

### GOOSEBERRIES.

Gooseberries should be planted by every one who has a garden, no matter how small. The bushes are tough and easily grown. All they require is good soil that is well drained and about two inches deep of old stable manure spread around the plants about two feet wide. The bushes should be set in October or November, about eighteen or twenty inches apart in the rows and two feet between the rows. In the fall trim the ends of the

branches two or three inches to induce lateral growth and consequently more fruit.

Some varieties are more prolific than others, and some are suited to one section better than to another, so that the nurseryman must be consulted as to varieties.

### STRAWBERRIES.

The strawberry is conceded to be the most luscious of all fruits known to cultivation, a universal favorite, yet grown by only a few in the kitchen garden. A patch of twenty-five by fifty feet will furnish berries for a family of four or five for more than a month, if early, medium, and late varieties are planted.

Strawberries should be set fifteen to twenty inches in the row and two feet between the rows when only a small, hand-cultivated patch is required. Pinch off the runners, leaving two crowns; and when cultivating, throw the runners into the row as much as possible. Late in the summer let the annual grasses, such as fox-tail and crab grass, grow. It will fall on the ground and form a mulch to keep the frost out, and also keep the berries free from grit.

Strawberries should be planted in April, so that the plants will get established before winter and will not be thrown out of the ground by the heavy freezes, as often happens when planted in late summer. In the Southern States they are planted in the autumn.

Pinch off all blooms the first season. That will make more vigorous plants, and will produce about double the amount of fruit.

Strawberry plants should be reset every third or fourth year, preparing the ground by thoroughly working over the soil. Add a little well-rotted stable manure to the soil.

## VEGETABLES.

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### SITUATION OF THE LAND.

For early vegetables or flowers the lay of the land should be considered as carefully as the condition of the soil, for therein lies the early or the late garden. If the land should be on the north side of a hill, it will naturally remain cold longer than a piece of land on the same hill, but on the south side, where the sun's rays strike more directly on the earth, warming the land at least ten days earlier than the land on the north side. Consequently vegetation will mature about ten days earlier when growing on a southern or southeastern exposure. The result should be apparent to a close observer. The rays of the sun when falling directly on the earth will radiate more heat than when falling on the earth at a longer slant. If the land is exposed to cold winds, a high, close board fence or close-growing hedge on the north and west sides will conduce to earlier crops.

### GARDEN SOILS.

For all garden purposes the best soil is a deep sandy loam, not less than nine or ten inches deep. To convey our meaning we will state that any soil with an underlying stratum of sand or gravel is known as a sandy loam. If the subsoil is of clay formation, the top soil is usually of the same nature, and is what is known as "clay loam," which is more compact than sandy loam, and is heavier to work, being sticky when wet.

It is a waste of time and of seed to attempt a crop on what is known as "thin land"—that is, clay only, with no top dressing of soil at all. It is true there are some plants that will do very well on such land, but they do not come under the head of what is known as "garden stuff." Such land will grow good crops of cow, clay, and whippoorwill peas; and these crops serve to improve such land. The goober pea will make good crops on thin land, the crop making fewer vines, but a superior fruit, consisting of more oil and less water than those grown on rich land.

Pure sand or gravel is also considered thin land. If sand with no clay beneath, fertilizing will be of little benefit, as with the first heavy rain that comes it will be lost in the bottomless bed of sand.

Gravelly land is often rich, and is often cultivated in the coarser crops, such as corn and different kinds of hay; but it is not suited to root crops. If the gravelly land is poor, about fifty farm wagon loads of stable manure to the acre will produce good results with almost all kinds of vegetables that mature their crops above ground.

If the clay land remains wet long after a rain and is very sticky and unyielding in its nature, it is often improved by spreading one to two tons of fresh stone lime to the acre. This should be done in the autumn, the lime producing a more porous condition that makes the land easier to work. The next spring a heavy crop of cow or clay peas should be sown broadcast on the land and well plowed in and harrowed well to reduce the clods as much as possible; and when the peas cover the ground eight or ten inches deep, plow them under, and the result will be richer and more friable soil to cultivate thereafter. The nitrogen conveyed to the soil through the

growth of the cow or clay peas acts as a powerful stimulant to the crops that follow such treatment.

### RECLAIMED WET LAND, PONDS, ETC.

Ponds and lakes, when well drained and allowed to dry out thoroughly before being plowed, often produce the finest crops of vegetables, especially Irish potatoes, cabbage, onions, beets, celery, salsify, turnips, asparagus, etc.

### AUTUMN PLANTING.

As the preparation of the vegetable garden is usually begun in the autumn, we propose first to introduce the cultivation of the onion. Onion sets for early spring use should be planted in the latter part of August or first part of September in rows not closer than ten inches wide and not closer than three inches in the row. Being planted at that time, they will get well rooted and be large enough for table use before freezing weather. The growth the plants will make through the warm days in February and March will make them presentable for the table by the fifteenth of March. They should be by that time nearly one inch in diameter. To make them show more white stem, they should be banked up with a little earth in the late autumn; but it should not be done when the ground is wet, as it will dry out hard in the sunny days and will do more harm than good.

The first matter to be considered is the preparation of the soil. The best soil for the growing of the onion is a new sod land of sandy loam broken up and thoroughly pulverized. There should be no stable manure used on onion land unless you are absolutely sure that it is thoroughly decomposed and fully one year old, and then it should be spread evenly over the surface after the sets

have been placed in the fall. After the crop has been harvested in the spring, the manure will be worked in when preparing for the summer crop, and it will serve to lighten the soil as well as fertilize the summer crops.

Shallots, or scallions, should be planted in August or early September. They are increased by division of the old roots, by planting the sets that form on the top of the old plants or from seed. Shallots, or scallions, are only fit to use early in the spring. When warm weather sets in, they get strong in flavor and are too tough for use.

Chives are a dwarf species of the onion. They are increased by division of the roots. They form large clumps, which have several hundred small sets matted together. They also grow from seed. Only the tops are used generally in flavoring soups, batter cakes, home-made cream cheese, etc. No one knows how to flavor with chives better than the French or German housewife. The flavor of chives is more delicate than that of the onion.

### GARLIC.

Garlic is also of the onion family, and most Americans have to acquire a taste for the powerfully odoriferous esculent. The whole onion family are known botanically as the "allium." Some are cultivated for their flowers, which are really beautiful, being much used in cut-flower work.

### ONIONS FROM SEED SOWN IN THE SPRING.

To grow large onions from seed, the soil should be a rich sandy loam, new sod land being preferred, as there is no stable manure likely to be on such land. It holds moisture well, is easy to work with the hoe and the fin-

gers, which is the best way to work the onion. To keep down weeds in the rows, as soon as the little plants get a good hold in the ground place about half an inch of soil to the plants. In one week go along the rows and with the fingers rake the earth away again. Then hoe out the middle of the row to kill the weeds there. In about ten days throw the earth to the plants again, and in another ten days repeat the process as above.

Seed sown in the open ground about the first of March in rows not closer than twelve inches wide and thinned out to three inches in the row will give room to grow fine large bulbs that will mature in the early summer. If it is not desirable to grow very large onions, the plants can be left as close as two inches and make bulbs large enough to please the ordinary dealer.

A very satisfactory process for growing large onions from seed is to sow the seed of some good kind of large-growing onion in the hotbed from February 1 to March 1 in rows three inches apart and one-fourth of an inch or more apart in the rows. About April 15 the plants should be nearly as large as a lead pencil, and should be taken from the bed at that time and transplanted in the open ground in rows twelve inches wide, and the plants set in the rows four inches apart, having first cut off the roots to half an inch, and cut one-third from the tops, and set them about two inches deep, and water each row as soon as you finish it to set the earth around the roots to prevent injury from drying. The plants while out of the ground should be exposed to the sun as little as possible, as such treatment will stunt them, interfering with the development of large bulbs.

We find the best way to do the work is to have a boy with a double-pointed dibber. Have the boy to go ahead. The first time he puts down the dibber he



will make two holes. The next move he will place one point in the farthest hole so as to gauge the holes to just four inches every move. A second person should have a basket of plants, dropping one at each hole. A third should follow, carefully setting the plants upright and seeing that they are deep enough in the ground. Immediately after planting a row, water it enough to set the plant if the season is dry; if the ground is moist, there will be no need to water. After one week from planting, use liquid manure poured in a shallow trench about four inches away from the plants, and throw the earth back in the trench as soon as through with fertilizing to cause the earth to absorb the liquid as much as possible. Keep the weeds down. Go over the ground with the hoe every ten days, and give liquid manure every twenty days, and you will have something to be proud of before August.

Watch the crop closely. When the plants are fully grown, the necks will get soft and the tops will fall over. The most common method of planting in the small garden is from sets planted in February and March. They require high cultivation and the same kind of soil in which the seedlings are grown and the same kind of fertilizer. Plant in rows twelve inches wide and three or four inches in the row. If you wish to grow large bulbs, plant four inches apart. Harvest as soon as ripe—that is, when the plants get soft just above the bulb so that the tops fall over and when the bulbs pull up as if they had no roots. Always place them in a cool, dry place where the wind will not blow on them.

Cultivate onions every ten days to keep down weeds, and also to keep the surface of the soil light, which induces a regular supply of moisture, which is very essential to any rapid-growing plant.

### LEEKs.

The leek is a variety of the onion, the seeds of which can be sown in September, about the first week, making nice young plants about the middle of October. The plants should be set in permanent rows not closer than ten inches apart and about two inches apart in the row. Some gardeners sow the seed in the permanent row and thin out to the proper distance. Of course that makes longer rows to weed than the short, thickly sown seed row.

About every ten days use the wheel hoe or hand hoe freely, and work as close to the plants as possible not to cut them down; then knock the little weeds that have just sprouted by working crossways of the rows with the fingers, afterwards replacing the earth thus removed, using the hoe, to prevent the sun from burning the stems that the earth had been removed from in the process of weeding.

### LETTUCE.

The proper soil for the successful growing of lettuce should be an open soil that has been well broken up to the depth of ten inches or more. If the soil is close or is of clay, about one-half inch of sharp sand or coal ashes should be spread over the land and well forked in to thoroughly incorporate the soil and sand or ashes.

Three or four inches of well-rotted stable manure added to heavy clay soils will also greatly assist in loosening the clay, and it also makes the finest of fertilizers.

Lettuce being impatient of a heavy wet soil, is inclined to rot if it grows at all. Lettuce revels in a soil that admits of a free circulation of air at the roots.

For winter and early spring use, lettuce seed should be sown in any convenient place out of doors about the first

of September. The seed should be sown thinly so as to have nice, stalky plants to be placed in the cold frames in October. The plants should be set five or six inches each way to give room for nice, large plants.

Of the many varieties of lettuce, the Big Boston seems to be the most useful in the hands of the amateur. It is a good outdoor lettuce, and does well in the cold frame in winter. It makes a large plant and a solid header, makes a fine show, and has a most excellent flavor.

The Hanson Improved is also a fine variety, and has the advantage of standing the hot summer sun.

For early summer use, lettuce seed should be sown thinly in rows in the cold frame in February. The small plants can be thinned out for table use or transplanted into permanent rows in April, the rows to be about fourteen inches apart, and the plants should be about six inches apart in the rows. Keep the weeds down by hoeing the crop every ten days.

### ENDIVE.

Sow in June, July, and August. Cover the seeds lightly. When up, thin out to eight inches apart, and water well afterwards if the weather is dry. When the leaves are six or eight inches long, bleach them by gathering the leaves up close and tying with soft twine. They should be tied when dry, or they will rot. When the weather gets very cold, take the plants up with a ball of earth and place them close together in a cold frame or dry cellar for winter use. The endive is used as salad, and is fine for garnishing. Almost any good soil will grow endive if water does not stand long on the surface after rains.

### CABBAGE, EARLY.

The best soil for cabbage should be a heavy, rich loam on which water does not stand long after a rain. On such a soil, with an abundance of stable manure, excellent crops can be grown.

For early spring cabbage, the seed should be sown about the first of October. If sown sooner, the plants may run to seed in the spring instead of making heads. In about four or five weeks the plants will be large enough to set in the cold frames where they are to be protected from cold, wind, and snow; and when the sun shines very warm, give them all the air possible. A light freeze will not hurt. The sash should be tilted an inch or two to prevent the plants from being injured from the heat that accumulates under the closed sash. Be careful when setting the young plants in the cold frames to set them as deep as the first leaves, press firmly, and tilt the sash several inches every day when there is no freezing; but when the thermometer drops to about fifteen above zero, cover the sash well with old carpet or any heavy fabric, even a few inches of manure or earth, which can be washed off when the weather moderates in February. Transplant some of the plants from the cold frame at once, as nice days are of short duration in February. If there is no severe cold or heavy snow, you will have cabbage nicely headed two weeks earlier than when planted in March. In March plant the remainder out for the main spring crop.

When planting early cabbage of the Wakefield or Early Flat Dutch type, plant them about twenty or twenty-four inches each way; and for the smaller kinds, such as Etampes and Early Express, plant them in rows two feet wide and fourteen to eighteen inches in the row.

If you desire to practice intensive gardening, you can

sow lettuce and radish seed in the rows with the cabbage, as they will be out of the way before the cabbage will begin to cover the ground.

Work the ground once a week and keep ahead of the weeds. Every second week throw a little earth up to the plants so they will be well hilled up at the last working.

### **CABBAGE, LATE.**

For late or winter cabbage, the seed should be sown in the first week in June, and should be protected from the noonday sun by driving forked stakes to hold poles laid in the forks. The poles should be three feet from the ground and a light cover of brush or weeds laid across so as to let about as much sunlight pass through as would be allowed by common lattice work, and the plants set out in July or the first of August. The late cabbage, being of a more robust nature, should be transplanted into permanent rows three feet wide and about thirty inches in the row. A little bone flour, about one tablespoonful to the plant, mixed with the soil immediately around the roots, will improve the condition of the plants wonderfully.

### **CAULIFLOWER IN COLD FRAMES, EARLY.**

Cauliflower requires almost precisely the same treatment as cabbage. The only difference is that the cauliflower requires more fertilizer and more moisture.

The very early sorts should be grown under glass in cold frames, which hold the moisture and protect the plants from heavy frost. The soil in the cold frame should be about one-half well-rotted manure, and should never be allowed to get the least bit dry. About one-half pint of liquid manure to each plant about every

twenty days will force a rapid growth, making nice, crisp heads.

The plants should be set about ten inches each way when planted in cold frames. The plants for the early crop should be from seed sown in October in a cold frame and protected with the sash through the winter; and also cover with mats, straw, or manure on the glass. The cauliflower does not stand cold as well as the cabbage and needs more attention.

The earliest spring crop should be set in the cold frame in February and the glass raised on one side three or four inches on warm days to prevent overheating and scalding the plants.

### CAULIFLOWER, SUMMER.

For an early summer crop of cauliflower, the seed can be sown about the first of February in a window box, flower pit, or under a sash in the garden; and when large enough to handle, plant them out in the garden in rows eighteen inches wide and ten inches in the row, and treat the same as early cabbage. Give them liquid manure every twenty days; about half a teacupful will be enough. Allow no weeds to get a start, keep the ground stirred with the hoe, and throw a little earth to the plants as they grow larger. In early spring there is always sufficient rain for cauliflower growing in the garden, but a liberal supply of liquid fertilizer is always rewarded by better results.

### ASPARAGUS.

If the grower wishes to raise his own stock of asparagus, he should sow the seeds thinly in rows twelve or fourteen inches wide the last week in March or the first week in April. One ounce of seed will produce three

hundred and fifty or four hundred plants, which will be more than enough for a large family.

To have strong plants, thin the seedlings to three or four inches in the rows, leaving the strongest plants; and when placing in the permanent rows or bed, you should choose the strongest in the rows. Do the last planting in February, as there are fewer roots lost in that month than when planting in autumn. Plant in rich sandy loam about eighteen inches deep, into which has been worked plenty of well-rotted stable manure. If you are compelled to use a clay soil, you can manage very well by making a trench fifteen inches deep and fifteen inches wide. Then place four inches of rotted stable manure in the bottom. On top of the manure place four inches of the best soil taken from the trench, and mix thoroughly with a garden fork. Tramp this down. To firm it a little, throw about one inch of the best soil taken from the trench onto this to keep the broken roots from coming in contact with the manure and causing them to rot before they get started into growth. Then place the roots in the trench just prepared twelve inches apart. Then take of sand, rotted manure, and soil from the trench and mix them well together, using one-third of each, and cover the roots about three inches deep; and then on this fill up the trench about an inch above the common level with nothing but rotted manure (coal ashes make a good substitute for sand, but should be put through a half-inch sieve). In setting the roots in any sort of soil, they should be placed about seven or eight inches deep. When set that deep, there will be no need to make ridges on top of the plants. If the plants are in good condition when set, they will easily come through eight inches of top dressing.

### ASPARAGUS IN BEDS.

A good arrangement for asparagus culture for the kitchen garden is to grow it in beds. The most convenient is five feet wide, with three rows in the bed, leaving one foot from each side and one foot between rows, and one foot in the row and eight inches deep.

### CARROTS, EARLY.

Any rich soil will grow good carrots; but a light, rich soil will grow them much finer. If you desire a few very early roots, sow the seed in a hotbed or a cold frame if the weather is mild in February. About the fifteenth of March sow in the open ground. If they are killed by frost, sow again early in April for the main crop. Make the rows not closer than twelve inches, and thin out to four or five inches in the row.

For a late crop of carrots, sow the seed from the fifteenth of July to the tenth of August; keep the weeds down, and hoe deep to keep the soil loose.

### CELERY.

The seed should be sown in a light, rich border as early as the soil can be worked in April, in drills from seven to ten inches apart. Cover the seeds about half an inch deep, using a roller or board to firm the seeds in the ground if the ground is dry. When the plants are two inches high, they may be transplanted to another bed or thinned out to three inches apart and left to grow until wanted to plant out in beds or trenches. The seed beds should be kept free from weeds; and if the weather is dry, the plants should be watered occasionally—should be given a regular soaking. In setting the plants, do not



forget to press the earth firmly around the roots, which is of much importance.

The plants should not be planted in permanent beds or rows before September. For this section the first week in October is a better time, as the summer drought will be at an end by that time; and celery being of a very rapid growth, it will be mature by the time real cool weather sets in. Set the plants in shallow trenches, about four inches below the common level. The plants may be set in a narrow trench, or the trench may be made into a bed wide enough for three or four rows, and in this case the plants are in a compact form to be covered for the winter where they grow. This will save labor where there is no cellar for storage. When grown in beds, the rows should be one foot wide and the plants about seven inches in the row. The bed should be made very rich with thoroughly rotted manure.

The plants should be earthed up two or three times, being careful not to let the earth get into the heart of the plants. With one hand gather the stalks together, and with the other hand draw the earth around the plants, pressing firmly. Do this in dry weather.

In field growing of celery the plants are set in rows about four feet wide, and the plants set six inches apart in the row when the plants are to be earthed up for early use; and when the plants are to be bleached in the cellar for winter use, they should be planted only two feet wide in rows and six inches in the row.

If the celery is not grown in beds, the best way to store it is to dig trenches where water does not stand. Make the trenches twelve inches wide and about two-thirds the depth of the plants. The celery is then taken up and set close together, pushing the roots firmly together, putting no earth between them. When severe weather comes,

cover the rows up with straw or leaves, adding more as the weather gets colder. Place boards on top to keep out rain and to hold down the covering of straw.

### **CELERIAC, OR TURNIP-ROOTED CELERY.**

This belongs to the celery family. Only the root or bulb is used for flavoring soups; and when boiled and sliced, it makes a most excellent salad. The best results in culture is to plant in medium garden soil, sowing the seed in April in rows as close as twelve inches. Drop a small pinch of seed every six inches apart in the row; and when they are well up, pull out all but one plant; work them over every eight days; let no weeds get a start; and when the bulbs begin to form, pull off the lower stalks as they mature, and you will get larger bulbs. This plant is grown on level land and requires no banking up. It may also be sown in seed bed like celery and transplanted to permanent rows. Celeriac can be stored in winter like beets and turnips.

### **BEANS (SNAPS), EARLY BUNCH.**

Wheat is first in importance as a food for man. As a farinaceous food for man and beast, the bean ranks next to wheat. All of the essentials to the building up of bone, muscle, fat, blood, nerve, and brain are to be found in the make-up of the bean. In the hands of the hybridizer the bean has been wonderfully improved, so that we have a crop from early spring until frost. For bunch beans for snaps, use any good soil. They will do very well in heavy clay if some old manure is forked in when preparing the soil. The ground need not be broken deeper than ten inches. Plant in rows twenty inches wide and drop the seed three inches apart in the rows.

To economize in land, plant two rows eight or ten inches apart, then leave a space of twenty inches; then two more rows, and repeat, etc. Hoe when the seed have come up, and at ten days, and at twenty days; and at thirty days finish cultivation by throwing the earth to the plants. By this time the plants will about cover the ground.

It is not a good idea to plant bean seed over two inches deep. They will often rot if the ground is wet, and several days will be lost on account of the depth of soil the seed has to grow through.

To have a succession of snaps, seed should be planted every two weeks, the last planting about August 1.

### BEANS, WHITE AND NAVY.

Some of these can be used as a string bean, but are intended to be used as a shelled bean or for winter use when dry. They are all of fine flavor, and are among the healthiest of foods. They do well in almost any garden soil without much fertilizing; and if the weeds are kept down for seven or eight weeks, the crop is made, and is harvested by pulling up the plants as soon as the beans are all ripe. Leave on the ground to dry out; and when perfectly dry, they can be thrashed out with a flail, straight stick, or by tramping on them on a sheet in the field or on a floor.

### BEANS, BUSH LIMA.

All lima beans are known by their flat appearance, and they are the most delicious of all the bean family, and are commonly called "butter beans." We refer you now to the variety that requires no stakes, as they do not grow over twenty or thirty inches high, with stiff stems

that carry the fruit clear of the ground. If it is desirable to grow this variety for dry beans, they can be left until all of the fruit is dry; and they can be harvested all at one time by pulling up the plants and laying them in small heaps to dry the stems; and when dry, they can be stacked like hay until a convenient time to clean them out for use, or they may be gathered as they ripen. They do well on any soil. They will make beans on poor land. They should not be planted until the ground is warm, as they will not come up well when the ground is cold or very wet. Plant the very dwarf varieties in rows about two feet wide and drop the seed about ten or twelve inches in the row. For the largest bush limas the rows should be thirty inches wide and eighteen or twenty inches in the row. Try your first planting about April 1.

### BEANS, POLE.

Pole beans should not be planted before the ground gets warm and dry. For this section April 15 is early enough. Some of the pole beans do well in the corn rows. The seed should be planted when the corn is about knee high or less. The vines will climb on the corn for a support. Poles for beans should be about seven feet long for best results. The beans should be planted in hills three feet or three and one-half feet each way. The pole beans do best in a deep sandy loam, whether they are pole beans, butter beans, or pole snap beans. If the lima or butter bean seed are very large, they will come up better if placed with the eye down in the bottom of a very shallow furrow. Press the seed down firmly, but do not cover deep. They will come up, and you can throw the soil to them as they grow. If planted in hills, they should be set three to a hill, about one inch deep, with the fingers, turning the eye

down. Hoe the crop every ten days to keep ahead of weeds.

The pole lima bean should be planted in rows about thirty inches wide and about twenty inches apart in the rows, the poles to be set as soon as the vines start to run. This is for hand cultivation. For horse cultivation, the rows should be not less than three feet wide; and for thorough cultivation, they should be checked each way, with three plants in each check, with a six-foot stake in the middle. In the latter case the setting of the poles should be put off as long as possible.

### TABLE BEETS.

The beet revels in a rich soil. It can hardly be made too rich. But they will do well enough for ordinary use in almost any mellow soil, whether it be limestone, sandstone, or alkaline. Sow the seed as early in the spring as the soil can be prepared, in rows not closer than twelve inches, and thin out to four inches in the row. If desirable for successive crops, sow the seed every two or three weeks. The early deep red, globe-shape, are the nicest for table use. Table beet seed sown as late as August 10 in this section will make nice bulbs to place in the cellar or to put in hills in the garden for winter use. Cut the tops off, pile them up like a pyramid, and cover with about three inches of earth in the early part of the winter; and when it gets very cold, cover to the depth of eight or ten inches, throw some straw on the hills, and place some boards to keep the wind from blowing it off.

### MANGEL-WURZEL, OR STOCK BEETS.

As these beets grow to a large size, the ground should be broken up as deep as twelve inches. Use plenty of stable manure, working it well into the soil. Make the rows as close as eighteen inches. Sow the seed in April; and when the plants are about four inches high, thin out to seven or eight inches in the row. Keep the weeds back by hoeing every eight or ten days. At the approach of frost they should be pulled up and placed in hills about five feet to the apex and covered lightly with straw or coarse grass until light freezes; then a little earth should be placed over this, adding more earth as the weather gets colder until there is about eight or ten inches of earth covering. Covering gradually prevents heating and rotting of the crop. In placing in the cellar, air spaces would have to be left to prevent the roots from heating there also. Grow in quantity for stock feeding.

### BEET, SUGAR.

This product requires the same treatment as the mangel-wurzel up to the time it reaches the sugar mill. This variety is also fine to feed and fatten cattle, as it contains a very large per cent of sugar. It also makes an excellent vinegar. It is very pale in color.

### BRUSSELS SPROUTS.

Brussels sprouts are considered by many to be equal to cauliflower for the table. The sprout proper is not much larger than a marble and as hard as the stalk on which it grows. When preparing for use, remove the outer covering. Cook whole and serve without breaking them up. When just cooked through, they are a dish fit for the gods.

Sow the seed early in April in a seed bed in some convenient place, laying off rows about three inches apart, and drop the seed as near as you can to one inch in the row. About May 1 transplant to the garden in rows twenty inches wide and one foot in the rows.

This is one of the hardiest vegetables we know. It will stand as much cold as any variety of winter kale without protection. And it does not require rich soil, either. It will do well in heavy clay soil, provided you add a little stable manure. The weeds must not be allowed a start, as collards will do no better than cabbage when weeds are allowed to grow. Hoe deep and often about every eight days if the weather is dry.

### CORN SALAD, OR FETTICUS.

Corn salad is used as a salad in the same way as lettuce, and is also cooked like spinach. The seed should be sown in a bed, laying off the rows three or four inches wide. Sow the seed thinly; and when about two inches high, transplant to the garden rows twelve inches wide and six inches in the rows. Work over the crop once a week with the hoe. Corn salad can be set in cold frames at the approach of cold weather. For winter use, set them about five inches each way. They do not grow as large as lettuce, and, therefore, do not need so much room. Protect them from severe cold and snow.

If left to winter in the garden, the plants should be lightly covered with straw or leaves, thus keeping the wind and snow off, that they may remain in better condition for very early spring use.

Corn salad is not so particular as to soil. It will do well in any ordinary garden. Allow no weeds, and hoe about every ten or twelve days.

### CORN, EARLY, SWEET OR SUGAR.

It is a well-established fact that the richer the ground, the larger the ears and the more ears to the stalk. To meet with the best success with early corn, the ground should be very rich, using plenty of stable manure, spreading it thickly over the land in October and November, so the fertilizer can be carried into the soil with the late fall rains. Break the land up in February, laying off the rows at once three feet each way, so that, should rain interfere with later plowing, you can drop about six grains to the hill where the two furrows cross, and cover with a hoe. Even if rain is falling, it will make little difference so early in the season. To work under the same conditions in the early summer, the hot sun shining on the wet land just worked over would render it so hard and cloddy that there would be almost a loss of the crop. When the plants are about seven inches high, pull out all but three stalks. If a frost kills it to the ground before it makes a joint, it will come up again and make just as good a crop; but if on examination you find the root frozen, plant again. It is hardly worth while to plant early corn in this section before March 15. At that time it is very likely to be killed by frost; but if there should be an early spring, it would be very gratifying to have extra early roasting ears. If the seed should be planted the first of April, you are almost certain to make a crop. It should be ready for the table in eight or nine weeks. As there is usually much rain at this season, there may be little chance to use the hoe. In that case it may be necessary to pull out the larger weeds by hand when they get several inches high.

If you wish to grow early corn in rows, lay them off three feet wide and drop two or three grains every eight to twelve inches in the row, thinning out to one or two



stalks at each place after the plants are too large for the cutworm to destroy. (A cutworm will cut off a plant larger than a lead pencil.) Some gardeners claim that more ears can be grown in the rows on an acre than in hills. For quantity we are partial to the row system.

### CORN, FIELD.

All the varieties of field corn require good land to give best results. If the land is rich, the rows should be laid off both ways, as near as possible east and west. The rows running east and west should be four feet apart; the rows north and south, three feet apart. By that arrangement the crop will get more sunlight. If the land is inclined to be poor, the rows must be five feet east and west and four feet north and south, so that there will be plenty of sunlight and that the roots will have more soil from which to take up nourishment.

This crop can be planted the first of April. Drop about five grains to the hill; and when larger than a lead pencil, thin out to three stalks to the hill on rich land and two or only one plant to the hill on poor land.

Corn land should be worked over every ten days to keep down weeds and to encourage moisture to rise when there is not sufficient rain. When the earth is kept loose, it acts like a blanket to keep the wind from drawing the moisture from the ground. If a succession of roasting ears are desired, plant every three weeks until July.

### CORN, POP.

This crop can be planted at any time from April 1 to July 1, and will yield an abundant crop. The best time is in the early part of April. Plant in rows. Drop three grains every twelve inches; and when about ten inches high, thin out, leaving one plant every twelve inches.

Do not harvest until the stalk is thoroughly dry. When gathered in that condition, the grains will be well developed and will pop freely. Cultivate the same as field corn.

### CRESS, GARDEN.

Upland cress is similar to the common water cress, but it will grow on dry land. The richer the land, the finer the crop. The curled or pepper-grass and plain-leaved sorts are of the same nature; but the broad-leaved variety does best in damp soil, doing much better in autumn and early spring than in summer.

Sow the seed of any of the above in March. If you wish a succession, sow every three weeks. Sow the seed thickly in rows ten inches wide, so that when the plants are three or four inches tall you can cut it off almost to the ground, and it will come again and again, furnishing several cuttings.

Cress is useful not only for salad, but for the breakfast table, like lettuce, and for garnishing.

### CUCUMBERS.

For a very early crop of cucumbers, sow the seed in the richest sandy loam in the garden about April 20, for the best results placing the hills four feet each way. When large enough to show signs of running, thin out to three of the strongest plants. Always use plenty of seed, from six to ten seed to a hill, as this plant seems to have numerous enemies.

As the early plants will naturally fail in a short time, it is well to plant a few hills every two or three weeks for a succession.

When wanted for pickling, the seed should be planted from the middle of June to the middle of July. Sod

land, when broken up in the autumn, is an ideal soil. In each hill place a shovel of well-rotted manure, mixing it in well with the top soil; but be sure not to place it in the bottom of the hill, as it will prevent moisture from rising in a dry season and will kill the plants.

As cucumbers and the rest of the melon family seem to have more insect enemies than most other plants, it is well to keep an eye on the plants from the moment they sprout and apply the remedy at once. We have had to apply the insecticide to the hills when the plants had just cracked the ground, as the insects would go into the cracks after the sprouting seedlings.

Cucumbers should be hoed over once a week until the vines cover half the ground. Afterwards the most noxious weeds should be pulled out by hand.

There are varieties of the cucumber that are intended to be handled only by the market gardener. They are grown in hotbeds and in greenhouses. So when selecting seed, get those best suited to the garden.

In combating the insects, use the tobacco insecticide referred to on page of insecticides.

## EGGPLANT.

The eggplant is a tropical vegetable, and will not stand much cold; and as it grows and matures its fruit rather slowly, the seed should be sown in a window box in March. The plants are stout and spread out considerably. When they are three inches tall, transplant them. When the weather is warm, about the first of May is the best time.

They will do well in almost any good soil if there is plenty of moisture in the ground and they are given a pint of liquid fertilizer to the plant about every twenty

days. Keep the weeds in check by stirring the ground once a week. Plant in rows two feet wide and two feet apart in the rows. If the land is very rich, plant three feet each way.

If the potato bugs infest the plants, use the Bordeaux mixture with arsenate of lead. As the fruits of this plant are always peeled for use, there will be no poison left on them.

### OKRA.

Okra should be sown early in March; and if by chance a frost should injure the young plants, renew the planting at once; but first pour boiling water on the seeds in a shallow vessel and leave to cool in the water. By this process the boiling water cracks the hard seed shell without injuring the germ, and the seed will sprout at once. If not treated in this manner, the seed will require six or seven weeks to come up.

This vegetable is highly esteemed by nearly every one.

Okra will thrive in any good garden soil; but if some old stable manure is worked in with the soil when working the crop, the plants will be much finer and will bear later. If you wish a late fall crop, sow seed in July.

Okra should be in rows three feet wide, and the seed should be placed three or four every ten inches; and when well started, pull out all but the strongest plant. Keep the weeds in check until the plants are a foot high. Being of a weedy nature, this plant does not yield readily to the inroads of weeds. Okra is highly esteemed for soups and stews.

### HORSE-RADISH.

This plant should be in every garden. It is a splendid relish, and is in much demand in the city markets in winter and spring.

Horse-radish is propagated from pieces of the roots, which should be seven to ten inches long and as large as a lead pencil. The cuttings should be set in the ground, with the upper end four inches below the surface, in rows two feet wide and about fourteen inches apart in the row. Be sure to place the sets upright, so that the roots will form only one crown. Two or three times through the summer run around each root with a long, two-edged piece of hardwood shaped like a sword, going down seven or eight inches. This breaks off all side roots, making straight and smooth pieces when dug.

Horse-radish does best in a deep, rich sandy loam, and requires little cultivation after it gets a start, as it has a heavy top growth that shades the ground too much for weeds to grow. In preparing the ground, break it up not less than fourteen inches deep. It is perfectly hardy and can be dug at any time for use.

### KOHLRABI.

The Kohlrabi is of the cabbage tribe, with a thick, globular stem. It is sweet and delicate when not too old. It is a most excellent vegetable, and should be in all gardens. It should be planted in rich ground and given careful cultivation. It should be sown in the garden in rows two feet wide; and when they have made four or six leaves, thin out to one plant every eight inches. When the bulbs are two or three inches across, they should be used, as they will be too tough later on. They are prepared for the table the same as turnips.

### KALE.

There are several varieties of the kale family which require the same cultivation as the cabbage; but the variety that is most useful in this section is the dwarf curled green, as it can be sown in August on land where a crop has matured, and is so hardy that it lives through the winter and is often ready for use almost as soon as the snow has melted. It is a delicious green, very much like the Savoy cabbage in taste.

The land should be broken up to get rid of the weeds and left a few days to let the weed seed sprout. When there is a goodly crop of weeds on the ground, sow the kale seed about two ounces to the square of fifty feet each way. Then break up the ground with a fork or cultivator. That operation will kill the weeds and at the same time cover the seed. In the spring when it is making rapid growth, this square will make more than enough for a large family.

### CANTALOUPE.

Cantaloupe seed should be planted after all danger of frost has passed—for this section, April 15. They should be grown in a light, rich, sandy soil, broken up eight or ten inches deep and laid off four feet each way. Put a shovel of well-rotted manure in each hill, working it in well with the top soil, never in the bottom. Plant six or eight seeds where the furrows cross. It is much better to raise the earth to a slight mound level on the top and about eighteen inches across. When planted this way, water will not stand on the seed and rot them. When the vines are nearly ready to run, pull out all but three or four of the strongest.

Keep a watch for insects from the day the seed sprout.

About this time it is a good idea to use the Bordeaux spray on the seedlings, letting it soak into the ground a little to prevent the vines from developing root blight—a very troublesome malady.

Keep a watch for flea bugs and striped melon bugs, as they do their work very rapidly and mostly at night. Cultivate every ten days until the vines nearly cover the ground. Do this with a hoe, moving the vines to one side as you work, and do not turn the vines over or pile them up on the hill, as it happens sometimes that they get sunburned when left in that position a few minutes and the growth is checked. After this length of growth, weeds will do little harm. Pinch off the ends of the vines when two or three feet long to induce early fruiting.

### WATERMELON.

Although the watermelon is of different character, it requires identically the same treatment as the cantaloupe, with the exception that the land should be laid off in furrows ten feet wide one way, and crossways of this run off furrows five feet wide. Where the lines cross, work in a shovelful of old stable manure with about four inches of the soil and make into hills about two feet across and two or three inches above the level. Plant at three points in each hill about five seed; and when nearly ready to fall over and run, pull all out but one plant at each point. Cultivate thoroughly and keep off insects. Hoe the patch once every ten days.

When the vines are five or six feet long, pinch off the ends, and they will bear much earlier.

### MUSTARD.

This plant is closely allied to the turnip, but makes no bulb. The seed is sown thickly in beds or rows about the middle of February; and when four to six inches tall, it is cut off with a sharp knife or thinned out, cooking roots and all. If desired for fall use, sow in September in the garden. It is nearly hardy.

Mustard does very well in any garden soil. Mix in a few radish seed when planting and make two crops at the same time.

### PARSLEY.

This is a flavoring herb of the highest culinary value. This plant does not require the best soil. It does very well in any ordinary ground. It seems to do best in a very damp situation.

Soak the seed about five hours and sow in rows eighteen inches wide about the last of March. When the plants are two or three inches high, thin out to five inches in the rows. If so desired, the plants that have been pulled out may be transplanted to other rows; or if a few are wanted for early winter use, they can be planted in the garden six or eight inches each way and covered with straw, grassy litter, or leaves on the approach of freezing weather, and they will be suitable for garnishing and flavoring until Christmas. They will also come out nicely in the spring and will be more beautiful than in the autumn.

For garnishing, the green curled or moss variety is the nicest. If wanted for flavoring, the smooth-leaved sort is best.

### PARSLEY, EDIBLE ROOTS.

This variety of parsley is grown for the roots, which can be made into a fine salad either raw or cooked.



### PARSNIP.

By many the parsnip is considered one of the very finest vegetables that we have, and should be grown more generally than it is.

Parsnips are generally used for stews and soups, but, properly cooked as a special dish, are really a treat to many. The best parsnips are grown in very rich, deep sandy loam. In such land they can be made to grow very large and sweet.

The seed should be planted about March 15 in rows eighteen inches wide and about six or eight seeds dropped every five inches; and when the seedlings have set three permanent leaves, pull out all but one plant.

Parsnips can be left out in the rows all winter if covered three or four inches deep with litter, leaves, straw, or earth.

Work over the growing crop once a week to encourage growth and keep rid of the weeds.

### PEAS, ENGLISH.

Garden peas are smooth or wrinkled. The smooth are the earliest and most hardy. The wrinkled are much sweeter and larger. Sow seed of earlier sorts in February; and if heavy snow should destroy the first crop, plant again as soon as possible. The dwarf, or earliest, sorts require no support, but the late sorts will need some brush set thickly along the rows for their support. All of the pea family is considered a poor-land crop; but if a few loads of manure to the acre are added to the land, the gardener will be repaid with a longer season of bearing.

The late, or wrinkled, peas should be sown about March 10; and for succession, every twenty days until the

end of June. That will give you a crop up to September. If a very late crop is desired, sow the early sort about August 10.

About two workings will usually do for the very earliest peas, but the later sorts should be cultivated every ten days if you would keep ahead of the weeds.

### FIELD OR COWPEAS.

Varieties such as black eye, clay, and whippoorwill are grown as forage crops and soil renovators. It has only been a few years since the United States Experiment Station officers have been urging the more general use of cowpeas on the farms, as they will grow on land too poor to grow anything else, where the red clover will not grow at all. But after cultivating in cowpeas for a year or two, the soil will be improved so much that clover can be grown thereon.

Cowpeas will not stand frost, and must not be planted until danger of frost has passed. All three of the above varieties are inclined to run and can be cut and dried for stock feed. They should be cut for hay when the seed pods are getting dry.

There is a week or two when there will be a fine lot of green shelled peas for table use, and there are few things better than green shelled clay peas. They are dark-colored, but are the sweetest of all of this class.

Some farmers do not break up poor land before sowing cowpeas. They sow the peas on the surface broadcast and then break up the ground. That covers them, and the harrow or rake levels the ground and covers those that were missed in breaking up.

## PEPPERS.

We do not propose to go into detail as to the number of varieties. They all require identically the same treatment.

Peppers are used in pickling and in many other ways. The large sorts—such as Chinese Giant, Ruby King, and others of that type—are the kinds used to make mango pickle. They are mild, sweet, and very crisp and tender. The long red cayenne is the sort generally seen about the kitchen and used in the cabbage pot. The small reds, or Tabasco, is the variety used to make pepper sauce.

It is customary with the market gardener to sow the seed in hotbeds. There is no advantage to be gained from doing so unless an extra early crop is wanted. The growing season is so long that pepper seeds can be planted in the permanent rows on April 15 and thinned out, and will make ripe pepper before late summer. That is soon enough for pickling.

Red pepper does best in deep, rich, sandy soil, but will do very well on heavy clay if some stable manure has been worked in.

The large-fruited peppers should be planted in rows two feet wide and set in the rows every eighteen inches. The smaller can be planted in rows twenty inches wide and ten inches in the row. Cultivate once a week; and if the soil is very poor, make a shallow furrow three inches from the rows and pour half a pint of liquid fertilizer to each plant, and throw the soil back in the furrow to prevent evaporation. Repeat the fertilizing every twenty or thirty days. The peppers should be gathered as they ripen so as to keep the plants bearing.

**POTATOES, IRISH OR WHITE.**

In order to have success with early Irish potatoes, they should be planted as early as the ground can be broken up. We plant about the first of March. Some gardeners plant their early potatoes in November. It is claimed that the seed planted in November will make a crop earlier than those planted in March. Our little experience proved that the fall-planted seed produced earlier, but smaller, potatoes; and we prefer March planting. Those planted in November will come up sooner and get the tops frozen, and that always produces a large number of small potatoes. Fall-planted potato seed often get frozen in the ground, and the planting is lost.

Plant in rows thirty inches wide, and drop a piece every ten inches, having cut to one eye or two eyes. As soon as weeds appear, work the ground with a rake or harrow. Follow the rows the first time, then cross the rows. You may pull up a potato occasionally, but that will make little difference, considering the amount of weeds killed. When worked the next time, the shoots will be showing, so that you can throw a little earth where they are coming up. That will prevent them from coming up before all frost is gone and will make them more thrifty. At each working throw a little more soil to the vines. That prevents the tubers from getting green and bitter from being too near the surface.

**POTATOES, LATE IRISH.**

Late potatoes require the same treatment as the early, but they should be planted from June to July 15. The late varieties are of slower growth, and the vines are more slender and would lead the novice to think that

they were not doing well; but he will be astonished to see the big potatoes that he will often dig.

In planting late potatoes, do not place the seed more than two inches deep, as they seem to scald. We have divided the seed, planting four inches deep and planting on the surface. Those on the surface grew; those planted deep rotted. Do not plant until a rain has wet the ground.

All of the potato family make their best crops in rich sandy loam or clay soil that has been highly fertilized for many years with stable manure. The late potatoes should be planted in rows three feet wide and from twelve to fifteen inches apart in the row. For blight, use Bordeaux mixture.

When potatoes are dug, they should not be left on the ground more than a few minutes, as the sun injures them, giving them a greenish color and a bitter taste. Place them in a dark cellar or in hills in the field where water does not stand, and cover with about two inches of earth to keep off the sun. If they are to remain in the hills through the winter, a little more earth should be added as the weather gets cold, so that by December 20 they will be covered one foot deep over sides and top of the hill, and should not be opened when there is a freeze. Do not put more than three or four barrels of potatoes in a hill.

Late potatoes, planted on July 15, may be frostbitten on the leaves; but leave them alone until the stems are all dead, as the tubers will grow considerably as long as the stems remain green.

Large seed potatoes should be cut to one eye; medium, to two; and small, made into halves.

### SWEET POTATO.

This is really not a potato at all, but one of the morning-glory family. Its native habitat is the warm, sandy lands of the South near the Gulf of Mexico and in the West India Islands.

Being of a subtropical nature, the plants cannot be set out until the ground gets warm—about the last of April. It is economy to get the sweet potato slips from some one who grows them in quantity, as they are usually cheap enough.

The common method is to plant the slips in ridges about eight inches high and thirty inches apart, but we do not think that should always be the rule. Where the soil is a rich sandy loam and well drained, the slips can be set on a level, like cabbage plants; and as they need working, throw the soil to the vines, and by the time the vines begin to cover the ground there will be ridge enough for the potatoes to develop in.

Where the land is rather heavy or wet, the slips should be planted in ridges. First break up the land ten inches deep and harrow or rake it until the clods are all broken and the ground is mellow. Plant the slips not closer than fifteen inches, allow no weeds, and work over the land once a week with a hoe.

Harvest the crop before a frost strikes the vines, or the tubers will not keep. If frost should fall on the vines, pull them away from the tubers before it thaws, as otherwise the sour sap goes to the roots, causing them to rot.

Sweet potatoes should be stored in a dry cellar and kept as cool as possible, not to be touched by frost.

### **RADISH, EARLY.**

The seed are sown in March, either broadcast or in rows ten inches wide and thinned out to one inch apart for the small sorts and more space for the largest kinds. They will stand some frost without injury. For a succession, seed should be sown every two weeks or oftener up to the first of June. After that time they are not much in demand for the rest of the summer.

Radishes do best in a light, rich soil. They are likely to be tough when grown in heavy soil. They should be grown rapidly to make them crisp, and should be eaten when rather small, as they are in better condition for the table then than at any other time. Weeds will hinder their growth, and should not be allowed. Work the crop often to encourage rapid growth.

### **LATE RADISH.**

Seed of the late, or winter, varieties should be planted from August 1 to September 15. They are very large, and should be thinned out to three inches in the row, and the rows should be eighteen inches wide.

The seed pods of the radish, when green, are sometimes used for pickling.

### **RAPE.**

Rape is not often recommended as a table vegetable; nevertheless, it makes about as fine a dish of boiled greens and bacon as any one could wish for. Rape is of the cabbage family, requiring the same cultivation as the turnip.

### SALSIFY.

This is also known as "oyster plant." Seed should be sown in early March in rows twelve inches wide. Sow the seed about one inch deep, so as to insure a stand, and thin out to three inches apart.

Do not make the mistake of placing manure in the bottom of the furrow, as no moisture can rise through the manure and the plants will die in dry weather.

Salsify should be grown in a light, rich soil; and when the plants are two inches high, spread well-rotted stable manure about one inch deep on the rows, and it will be worked in with cultivation; and when it rains, the fertilizer will be carried into the soil and taken up by the roots. This crop does not have to be harvested to keep it from freezing. It is perfectly hardy, and can be dug when wanted, and will be fine and plump next spring.

### SPINACH.

This vegetables does not thrive in hot weather. It requires a cool, moist season to make it grow rapidly. It is then at its very best, being tender and crisp. Spinach is often sown broadcast, but really should be drilled in rows one foot apart, as in rows the weeds can be better controlled. As it grows, thin it out for use, and cut it as soon as it is large enough to handle.

Any ordinary soil will grow this plant; but if the land is rich, it will be larger and deeper colored and will grow faster. For a succession, sow every two weeks, the last not later than the first of May; for fall use, sow about the first of August; and for winter use, sow in September. Winter-grown spinach can be cut at all times when not covered with snow. Work often enough to keep down weeds; and when the weather gets real cold, cover



the rows with straw leaves or any clean litter, and it will keep in better condition.

### SQUASH, SUMMER.

For the finest squash, the ground should be very rich. A deep sandy loam is best. In the previous fall the land should have a liberal amount of well-rotted stable manure about two inches deep and thoroughly worked in about February. To have very early squash, the safest time to plant is about April 10. Lay off the hills three feet each way for the bush varieties. Raise a flat hill about three inches and about eighteen inches across, and at three points, ten inches from each other, plant three or four seeds; and when the plants have made about five leaves, pull out all but three in the hill and cultivate thoroughly.

At times the squash-vine borer gets troublesome. You can tell when he is at work by the borings appearing on the stems. When this is noticed, place a shovel of earth on the vine farther up so as to induce new roots and continue the crop for a longer period. The squash-vine borer is hard to control, as he flies at night.

### SQUASH, WINTER.

The winter squash also requires a rich soil. They do not mature so rapidly as the summer varieties. The shell is hard, enabling them to withstand considerable handling without injury.

For winter keeping, they should be placed in a dry, frost-proof cellar or a cool room where they will not freeze.

As the winter varieties make considerable vine, they should be planted in May or June in hills two feet across, not nearer than six feet each way. Plant a foot apart,

at three points in each hill, about three or four seeds; and when well started, pull out all but one plant at each point. Cultivate every eight or ten days, and pull all weeds out of the hills.

### TOMATO.

Not quite one hundred years ago the tomato was considered a great curiosity. It was not thought to be fit to eat, as it might be poisonous. It was known as the "love apple." At the present time it is quite a factor in the wealth of the farm. The tomato is from the tropics and will not stand frost. If early plants are wanted, they can be started in a window box where there is no frost, or they can be obtained from a nursery.

When setting in the garden, make the roots muddy and press the earth close about them, and they will not wither.

The tomato will do very well on moderately rich land, not making much vine, but fruiting well. In rich land they make too much vine, sometimes to the detriment of fruit bearing.

To grow fancy tomatoes, all of the suckers on the opposite side of the stem from a bunch of fruit should be pulled off and all of the fruit on a bunch pulled off but one. The ordinary gardener does not go to that trouble. He pulls off the suckers only, and often leaves some suckers to make more vine later on.

Tomatoes set in poor land can be placed as close as three feet each way. In rich land they should be placed five feet each way; and if not tied to stakes, they will cover the ground so that it will be almost impossible to walk over the land and not injure the vines. Where the operator has the time, the vines should be tied to stakes four or five feet high. The fruit does better, the vines

look neater, weeds can be kept down, and the ground can be worked all summer, so that when a dry spell comes the regular hoeing will bring up moisture in the dryest weather.

Do not plant in open ground before April 15, as the plants may get killed by a late frost, so that you will have to replant, and for that reason you should have as many more plants as you think you will need.

Nearly all of the large kinds are sweet, with few seeds and thick flesh, but are all later in ripening. The early sorts are likely to be rather sour, with plenty of seeds and juice; but this plant is being improved year by year, and by all hybridizers the object in view is to get thicker flesh and sweeter fruit, with earliness in ripening. The small varieties are fine for preserving.

### RHUBARB.

If it is desirable to have a crop in the quickest possible time, the best plan is to obtain roots from the nursery and plant them in rich sandy loam if possible. If ordinary soil is to be used, lay off the land four feet each way; and where the furrows cross, fork in about a peck of well-rotted manure about a foot deep and about fifteen inches across, setting a root in each hill or check. The most successful planting is done in February. The roots are inclined to grow at that time, and soon heal over where broken, and will grow rapidly. To have an extra early crop, place barrels or boxes over the hills and cover the boxes with straw or leaves to keep out the frost. In a short time there will be a nice lot of bleached stems, with very little leaf on them.

If it is desirable to grow young plants, start the seed in a window box the first of March, sowing the seed in

rows four or five inches apart. The soil in the box should be rich sandy loam. Keep a pane of glass on the box at night and on cold days so that the soil will not freeze. In six weeks the plants will be large enough to transplant to the open ground in rows twelve inches wide and the plants set in the rows twelve inches apart. Allow no weeds to get a start. Work the ground frequently, but do not use any of the stalks at this time, as the plants will require all the leaves to build them up for future use. These young plants should be set in the permanent hills in the next February, preparing the hills as per directions previously mentioned in this chapter. No leaves should be pulled off until the next season, or in the spring of the third year.

### PUMPKINS.

They are usually planted in every third row in the corn and about eight or ten feet apart, two seeds at a place. When grown alone, lay off rows eight feet each way and place three or four seeds at each crossing; and when well started, pull out all but two.

Pumpkins will thrive in any soil. If it is very poor, throw a shovel of old rotten manure on the hill after the seed are planted. Keep the weeds down and work once a week. There is an impression abroad that a pumpkin is not fit to eat until frost falls on it.

If you wish to keep pumpkins through the winter, be sure that frost does not fall on them.

In gardening do not be superstitious and wish to plant in the light or the dark of the moon. Plant the crop in the ground and give it good cultivation. The United States agricultural officials have thoroughly tested the subject, and have found that there is nothing in it.

**HERBS USED FOR FLAVORING.**

Dill is much used for flavoring pickles.

Sage is used in the preparation of meats and in dressing for poultry.

Thyme is used for flavoring soups and other dishes.

Sweet marjoram is used for flavoring soups, cream cheese, etc.

There are a number of other sweet pot herbs, but these mentioned are easily grown everywhere and usually fill the wants of the housewife.

There is a story that is still popular with some people about the boy carrying two pumpkins in one end of the bag and a large stone in the other. When questioned as to why he did not throw the stone away and put a pumpkin in each end of the bag, his answer was that "dad" never did that way.

Many people are much on the same order about the cultivation of plants, still using an old-fashioned hoe to work the garden, when the same work can be done in one-tenth of the time when the plants are small, and almost as rapidly when the growth has very much increased. The improved wheel hoes and cultivators are too cheap to consider the cost as compared with the labor saved and the excellent work they do. If a garden line is used to make the rows straight and a hand seed drill has been used in planting, some beautiful work can be done, and the wheel hoe can be worked right up to the plants, leaving very few weeds to pick out of the rows.

## EVERGREENS, SHADE TREES, ETC.

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### EVERGREENS.

The following are a few of the most suitable evergreens for ornamental effects for the South:

#### RETINOSPORA.

This is also known as "Japan cypress." It is really what we commonly call "white cedar" or "cypress;" but the family is quite numerous, there being as many as fifteen or twenty varieties, being in size all the way from a few inches tall to as much as thirty-five or forty feet high.

The larger sorts are usually bright green, but the low-growing sorts are often tipped with beautiful golden tints, while others are variegated white and green in beautiful contrast. The larger-growing trees can be grown as single specimens, giving a grand effect to the lawn, be it large or small. The dwarf sorts may be arranged in groups with the most beautiful results, especially when placed in front of dark-colored foliage.

The Japan cypress does well either in low or elevated situations, even in rocky places. It should be planted in October or in February or March.

#### SPRUCES.

It is safe to say that the spruces are more generally planted than any other evergreen, as much for economy

as for ornamentation. In some sections they are used as windbreaks by planting them thickly in a double row about eight or ten feet apart and the same distance between the rows.

There are about a dozen varieties of spruces on the market, and they are all meritorious. These trees require little attention after planting. With few exceptions, they are very graceful in their growth. The foliage varies in color in the different varieties from light to very dark green, silvery gray, golden in the spring, changing to green, and light blue.

The spruces are all hardy, grow rapidly, and are reliable to plant almost anywhere. They make beautiful trees when grown individually, and in groups are just as effective.

Plant in February or March.

### PINES.

The pine family thrive in a wide range of climatic conditions. They are to be found native of both mountain and valley, from the Arctic Circle to the Equator. They are mostly of pyramid form, and grow rapidly in any soil.

Pines are very ornamental on lawns and in parks. They are so varied in character that, by choosing from the many species, trees can be selected to suit a small area or a large space. When arranged in groups or in double rows for windbreaks, their value cannot be too highly appreciated.

To meet with the greatest success in planting the pines, they should be gotten from a nurseryman who root-prunes his pines so that the trees may have numerous small new roots and be taken up and transported with a small ball of earth.

Pines may be planted in mild weather any time from October until March, but are more likely to live if planted in March or April. Most of the pine family are inclined to be clothed to the ground, and are most attractive and natural when allowed to remain in that condition.

### JUNIPERS.

This is wonderful for the many forms it embraces, from the smallest dwarfs to trees of considerable height, while different tintings of silver, yellow, and green characterize the foliage, which has much the appearance of the common red cedar.

Junipers are remarkably vigorous, and thrive in bleak, barren places; in poor, stony soil; in low, damp ground; or almost anywhere. The columnar forms are used for making hedges and as individual specimens; the trailing varieties, for rocky places and sandy slopes. It is also used in groups and borders.

Junipers may be planted in February, March, or April. The dwarf columnar varieties, when made into hedge rows, can be set as close as ten inches; the larger sorts, in proportion or as desired. Like most evergreens, they can be planted as late as April; but in the South they can be set any time through the winter.

### RED CEDAR.

This is one of the most useful of all of the evergreens, the wood being very valuable and much used in the arts; and the tree itself, of a deep-green color, gives a most beautiful aspect to the premises, whether as an individual plant, hedge, or when trimmed into various forms. The natural form of the red cedar is pyramidal and clothed with verdure to the ground, and the freedom



with which it grows on poor soil and on rocky places gives it a valuable quality.

Plant in February or March, tramping the soil firmly on the roots so as to leave no open places in the soil.

### ARBOR VITÆ.

These highly ornamental trees, though many grow upright, do not reach to a great height. They are useful for small places as well as larger areas. They are hardy, growing vigorously in all kinds of soil. They are easily transplanted. Their compact, neat appearance and the frondlike foliage, in many cases brightly colored, make them useful in grouping and bordering, for cemetery and lawn specimens, for hedges and screens, and even for window boxes and vases.

Arbor vitæ can be planted almost any time from November to the first of May, but are more likely to grow at once if set out about March.

The characteristic form of the arbor vitæ is conical, and they should not be trimmed on any account unless to rectify an accident.

### HOLLY.

There are several varieties of the holly, but our native holly can hardly be outclassed in beauty, both in leaf and in brilliant scarlet berries that thickly adorn the limbs in the autumn and winter. Sprays of holly berries are highly prized for the holiday decorations.

The English holly has darker leaves than the American variety and does not grow so tall.

The Japanese holly has dark-green leaves and a neat habit of growth, being a good plant to make into hedges, and is hardy as far north as the latitude of Chicago.

All hollies do not bear berries, so that it is advisable to plant several trees so as to insure getting some that do.

### BOX.

The box tree—the familiar, old-fashioned box—has small, dark, evergreen, glossy leaves. The dwarf box is used for borders along walks, etc. This variety does not grow over six or eight inches high, and should be set about four or five inches apart so as to make a compact line. They thrive best in shady situations.

The variety known as “myrtle box” will grow in the sunlight or shade, either, and is much used for grouping, as well as borders, and for planting against the foundations of the home and along the terrace. They should be set about twelve or fourteen inches apart.

The tree box will grow as tall as twenty feet or more, and they are much used for decorative effect on the lawn or in the park, where they show to great effect in combination with other shrubbery.

The box is tenacious of life, outliving several generations of people. It will grow in almost any soil, and can be trimmed into any form or fantastic shape desired without injury.

### MAGNOLIA GRANDIFLORA.

This is the magnolia of the South, but is planted and does nicely in many of the Northern States. This variety has large, glossy, oval leaves about eight inches long and blooms when only a few feet high, but in time will make a large tree. The bloom of this variety will measure six or seven inches across, of the purest waxen white, and is deliciously fragrant. This evergreen sheds its leaves in the spring as the new growth puts forth.

### YUCCA, ADAM'S NEEDLE.

This is sometimes called "bear grass," and somewhat resembles a coarse grass. It is often used with good effect to break the monotony in a stretch of sod. It can be made to do good service as an edging along a driveway or as a plant in front of a line of low-growing trees or shrubbery. It is evergreen, and in the early summer throws up tall, strong stalks about seven feet tall and laden with an immense cluster of ivory-white, bell-shaped, sweet-scented flowers.

The yucca can be planted any time from September until April. When planting, space them about eighteen inches apart.

With a little care in planting, tramping the soil around the plants so as to leave no open spaces among the roots where the air can circulate, evergreens can be planted with safety about October, but should be tied between two stakes to prevent the wind from shaking them loose and letting the frost into the roots; but the safest time is in March or April. In the extreme South they may be planted any time from October to March. We would advise staking them against strong winds.

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### SHADE TREES.

The following are a few of what we believe to be the best native shade trees for making groves and to plant about the home:

#### MAPLE.

The maples, both soft (or water maple) and hard (or sugar maple), are more generally planted for shade than any other tree.

The soft maple is used on account of its rapid growth and dense shade. Although the growth is irregular, the tree has a graceful aspect.

The hard maple is of slower growth, being of pyramid form. It is more graceful, makes a more dense shade, and is not so easily broken by the wind. When the first frost of autumn touches the leaves, they turn to the most beautiful shades of yellow, gold, and crimson.

The soft maple makes a medium-sized tree, and is short-lived, lasting about fifty years. The sugar maple develops into a good-sized forest tree, and will last for several hundred years.

Both sorts will grow in any soil and are easily transplanted, which can be done in late autumn; but we prefer planting in February, March, and April. If the trees are set where the wind will blow hard, always brace them with strong cord or wire, which should be lightly padded where the wire comes in contact with the bark; and always mark the north side of the tree before taking it up, and turn that side to the north, so that the sun will not burn and kill the tree. Observe this rule always in removing and planting trees of every description, and you will never have trees with dead bark on the southwest side.

### CATALPA.

Catalpas are popular in commercial and ornamental planting. These tropical-looking trees produce showy flowers about July. Their leaves are large, glossy, and heart-shaped. The long beans on the *Speciosa* variety are odd and attractive. (This variety is the kind used commercially on account of the almost indestructibility of the wood.)

Catalpas thrive in any situation or soil, giving quick

results, growing very rapidly. As an ornamental flowering tree for midsummer; they equal any. They may be planted any time in the late fall or early spring.

### RED ELM.

In landscape planting the elm is very generally used. It has a massive top of large proportions. The branches are of a drooping nature, spreading into graceful, sweeping arches, clothed with dense fringes of foliage. The elm is extensively used for large lawns, public parks, etc.

Elms grow best in fertile soils. They may be planted in October, November, February, or March with good results.

### LINDEN.

Lindens are rapid-growing, large trees, suitable for lawns, parks, and as individual trees about the home. They are of rounded, symmetrical form, and make a fine shade tree. In the spring they have light-yellow, very fragrant flowers. The leaves are large and almost round. These trees will grow in almost any ordinary soil.

The lindens are also known as "basswood." They can be planted almost any time, but we would advise setting them in February or March.

### WILD CHERRY, BLACK.

The wild cherry is not as generally planted as it should be. It is really one of our most beautiful and substantial trees. With age it will attain large proportions, equal to most forest trees. It appears to have few insect enemies, and is always clothed with its deep-green, glossy leaves. In early summer it produces myriads of long racemes of small white flowers that emit a pleas-

ant perfume, and in the autumn the whole tree is literally covered with glossy, black fruits, fine for making wine.

Plant in late fall or in early spring. This variety of cherry grows best in rich land, but will give satisfaction in any soil.

### **YELLOW POPLAR, TULIP TREE.**

This is a grand native tree of rapid growth, with a smooth, clean bark, which gets rough after thirty or forty years of growth. The branches spread out, covering a wide area. The foliage is large, dark, glossy green. When the tree is mature, it produces freely in June, creamy, yellow, sweet-scented, tulip-shaped flowers. This is one of the most valuable of timber trees.

Yellow poplars should be planted in the late fall or early spring.

### **HACKBERRY, NETTLE TREE.**

For general planting the hackberry has not been brought to the front, where it really belongs. We believe it to be one of the most ornamental of our native trees. It is almost as graceful in growth as the red elm. It has wide-spreading branches, with light-green foliage that makes a dense shade. It takes kindly to almost any soil or situation. It is easy to transplant, can be set in nearly every month in the year, and appears to have very few insect enemies.

The hackberry seems to be the chief feeding place for the birds throughout the winter, being literally covered with small brown berries with a very agreeable flavor.

## SWEETGUM, LIQUIDAMBAR.

This tree is of rapid growth; of tall, rather narrow, pyramidal form. It grows equally well in lowlands or on elevated situations. The bark of the young trees is unusually rough, giving rather an odd appearance, especially to the smaller branches. The beautiful, glossy, star-shaped leaves make a cooling shade on a warm summer day. If there is any air stirring, some of the leaves are sure to be moving, suggestive of a refreshing breeze.

Sweetgum trees are a little uncertain when being transplanted, so that the best plan is to dig a trench around the tree to be moved. Dig as near as two feet of the tree and as deep as eighteen inches, so as to cut off most of the roots near the surface. This should be done about September or in the spring previous. Fill in the trench again and leave until February, March, or April. New roots will have been made by that time, and the tree can be transplanted.

Having given you a list of a few of our best native shade trees, we will now give you a few of our best undergrowths suitable for groves and parks:

## DOGWOOD.

There is nothing finer for planting in groves of forest trees than the dogwood. In early spring the trees are literally covered with white-petaled flowers about two inches in diameter. In the autumn the leaves turn to a beautiful deep-crimson color.

Dogwood will grow in full sunlight, and will grow in any kind of soil that any other tree will thrive in.

### REDBUD.

Early in spring, before the leaves put forth, the redbud will be clothed in a thick mass of delicate pink flowers. Even the body of the tree will have sprays of flowers in seemingly unusual places.

### PRIVET.

The privets are among our most ornamental and useful shrubs. They grow rapidly, either in the open or under the shade of trees. The privets are not particular as to soil. They will grow in rich or poor land, in low and wet places, on hilltops, in sandy or rocky places alike. Their good qualities can be seen when grown in groups, when trimmed into all sorts of forms, and more especially when grown in hedges, in which form they are best known.

Privets bear shearing well, can be kept at any desired height, and seem to have no insect or fungus enemies. Some varieties are almost evergreen, and all are most easy to transplant, which can be done any time when there is no freeze.

### WEeping WILLOW.

This variety is also called "Babylonian willow," one of the most graceful of trees. Although not a native, it has taken most kindly to the land of its adoption. It is claimed that this tree was first recorded as growing plentifully in the vicinity of ancient Babylon. All of the trees in America are said to have originated from a cutting from the tree over the grave of Napoleon Bonaparte. Nevertheless, it is a most graceful and beautiful tree; and when planted near the bank of a stream or lake, it lends a most enchanting effect.



The weeping willow will thrive nicely in a grove of forest trees where the sun can shine through the foliage part of the day, and lends a pretty contrast to the view—more so if there is a very dark background of foliage or other good contrast. Being easy to transplant, it can be moved any time in the autumn or early spring.

Almost any nurseryman can furnish all of the above-mentioned stock.

## GRASSES.

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### BLUE GRASS, KENTUCKY.

This is the finest pasture grass of them all. It is a native of Tennessee as well as of Kentucky, and does not have to be cultivated, unless a fine lawn is required, than which there is none finer.

Blue grass is perennial; and when you once get a good stand, it will stay with you for many years. It will grow on any land, but flourishes best in rich soil. An old, partly run-out sod land can be renewed by sowing seed and raking it in on the bare spots in February, March, or April. But if desirable to renew the plot entirely, break up the land in October or November. Leave it rough just as the plow leaves it. The freezes will reduce the clods to some extent, so that all that is necessary is to sow the seed on the land in February, March, or April, and harrow it back and forth several times to be sure to get the seed well covered. Sow from seven to nine pecks to the acre. Blue grass makes runners underground, and in a few weeks will make a spread of eighteen or twenty inches, so that it is not necessary to sow so much seed per acre unless there is some haste to obtain a heavy and quick growth.

Blue grass does well in partial shade, but will grow in full sunlight unless there should come a protracted late-summer drought; even then the roots do not die, but will make a fresh growth with the first shower that comes.

### CANADIAN BLUE GRASS.

This variety is very hardy, and will grow on the poorest and driest land. It does not grow tall, only about eight or ten inches; is of a wiry nature, but very nutritious. The stems are flat, and the color is really of a blue cast.

There is nothing finer to grow in exposed places and very steep terraces. The roots and stems combine to hold the soil in place.

Sow in March eight to nine pecks to the acre, and rake or harrow it in. Being a perennial, it will last for many years.

### CREEPING BENT.

This is one of the most valuable of the lawn grasses, and will stand more hard usage than any other grass. It seems to improve under bad treatment. From constantly walking on it the sod gets deep and firm.

Break up the land and sow the seed in March or April, and harrow the land both ways to insure covering the seed. Sow about twelve pecks to the acre.

## PESTS, DISEASES, ETC.

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We will now devote a little time to insect pests and fungus diseases and their treatment.

### CUTWORMS.

As the cutworm appears to be the first to commence work in the spring, we will give him first consideration. Cutworms attack a great variety of plants, and are always more numerous upon land which has been in sod for a year or more. To destroy cutworms, moisten a quart of corn meal or wheat bran with water, to which add and mix thoroughly a half teaspoonful or less of Paris green or other poison and a little molasses. Place small quantities of this in various parts of the garden where the worms are at work, being careful to place the poisoned meal upon the ridges and not in the hollows. Of course it should be placed so that poultry or domestic animals cannot get to it.

If nitrate of soda is scattered over the cabbage land until it has the appearance of a light frost, worms and bugs of every description will leave at once. When only a few plants are to be set out, wrap the stem with newspaper, and the cutworms will not injure them. Tomatoes will not stand the nitrate of soda on the stems; it should be sprinkled around them.

### SCALE INSECTS.

These are small sucking insects. Owing to their small size, their presence is not generally known until the

injury caused by their work becomes apparent. The limbs on trees die, and on examination are found to be covered with an incrustation showing many dark specks—a sure sign of scale of some sort.

The United States Experiment Stations give several remedies that are a little troublesome to prepare; so we give you ours, which is simple in the extreme and is just as effective, and has our fullest indorsement because of the cheapness of the ingredients and the ease with which they can be procured. Use as a spray in the proportion of three teaspoonfuls of granulated concentrated lye to one gallon of water. This is to be used in the winter or early spring before the buds begin to swell, as it is strong enough to burn new growth and will burn the hands if handled carelessly. Use a good force-pump spraying outfit; they can be had cheaply. Spray from both sides of the tree, and do it thoroughly from the very top to down on the ground. If this remedy is applied from the forks of the trees to the ground as soon as the leaves have fallen, you will be rid of the borer also; but all rough bark should be removed first.

### PLANT LICE, OR APHIS AND WOOLLY APHIS.

These are the lice so common upon a great variety of plants. They may be green, red, or black. Green seems to be the most common. Some have wings, others have none; but they are all injurious alike. Where ants are running about on plants, there is likely to be plant lice. A strong decoction of tobacco is usually recommended. This is made by pouring boiling water over a tubful of tobacco stems, to be used when cold. But a simple and cheap remedy is made by dissolving in the proportion

of one-third of a one-pound bar of yellow soap in one gallon of boiling water. Boil until all is dissolved. The quickest way to dissolve is to slice the soap very thin. Use this when very warm, as it gets thick when cold. The plants will look as if they had been varnished, but no injury will be done.

The woolly aphid looks like a very small piece of cotton on the plants. It will also yield to the preparation of soap if used thoroughly.

All of the aphids are injurious to plant life, both on the foliage and the roots, especially asters and chrysanthemums, among herbaceous plants, and among the fruits. They appear to do more injury to the roots of the apple than any other, on account of which all fruit trees and grapevines should have a shovelful of fresh wood ashes or air-slacked lime placed immediately around the base of the stem, which will prevent aphids and also borers.

### REMEMBER THIS.

Spray thoroughly, or not at all. This can be accomplished by the application of a small amount of spray liquid on every part of the plant—top, middle, and bottom. An excess of spray at any particular point is both wasteful of material and may cause injury to the foliage.

Never spray fruit trees when in bloom. This is likely to wash off the pollen; and when this occurs, there will be no fruit, and the bees of the neighborhood will be poisoned.

Label all poisons and put them where children and domestic animals cannot get to them.

When using a spraying solution of doubtful strength, try it on a plant and wait an hour or two for effects before using.

In spraying with Bordeaux and poison on fruit trees and grapevines, do so every fifteen or twenty days until about two weeks before the fruit is expected to ripen. If the fruit is discolored by the use of the Bordeaux mixture when gathered, have a vessel containing good vinegar or acetic acid that has been reduced with water to about the same strength as very strong vinegar, into which drop the fruit for a few minutes, and then place it in clear water, thus removing all discoloration and poison. The poison must not be added unless insects are present.

Fungicides are substances used in destroying fungi, which are low vegetable organisms causing disease in plants. More correctly speaking, the fungicide acts as a preventive of plant disease by obstructing the germination of the spores of the fungi that causes such disease. Since these spores grow upon the exterior portion of plants, if we cover the plants with a coating of copper sulphate or other chemical deleterious to the germination of the spores, the reproduction of the fungi is held in check and disease is prevented.

In combating fungous diseases, the Bordeaux mixture is the standard remedy, and consists of copper sulphate, lime, and water. The proportions and manner in which the various ingredients are combined so largely affect the resulting mixture that it would be a difficult matter to make identically the same mixture twice in succession. The formula most generally in use is the following: Copper sulphate, two pounds; fresh lime, two pounds; water, twenty-five gallons. The copper sulphate should be dissolved in twelve gallons of the water (never use metal vessel) in a tub. To dissolve the copper sulphate readily, it should be placed in a coarse cloth and suspended in the water so that the copper sulphate

is just covered. It will soon pass through the cloth and mingle with the water. The fresh lime should be slacked in another vessel in about two gallons of boiling water. When it is all slacked, add cold water to make it twelve gallons. The two solutions should then be poured into a barrel. Two people should pour the solutions into the barrel at the same time so as to have the proper chemical combination.

If chewing insects are to be combated, arsenate of lead should be added to the fungicide to kill them. To twenty-five gallons of the above Bordeaux mixture add one pound of arsenate of lead, first thinning it down with a little water so that it will thoroughly incorporate with the mixture.

It is advisable to strain the fungicide when adding the poison so as to avoid possible clogging of the spray nozzle.

Bordeaux spray should be used about every two weeks on fruit trees and on vegetables whenever fungus diseases appear, thus keeping the disease in check.

The above preparation, when the poison is added, should never be used on any plant that is used as greens or as salad or on cauliflower. The growth of the cabbage being from the inside, the poison used on them is thrown off with the old outside leaves, which should not be fed to stock. The United States Experiment Station management claims that a person would have to eat at one sitting sixty heads of cabbage to be even made sick from the effects of poison used. It will be readily seen that it is impossible to be poisoned from using the vegetables.

If only a gallon or two of fungicide is required for a few roses, etc., add to two gallons of water one tablespoonful of hyposulphide of soda. If insects, such as



worms or slugs, are troublesome, add one teaspoonful of Paris green. Keep well stirred while using.

The United States Experiment Station mentions a number of insects that have to be looked after to prevent them from destroying trees. The following is the list that is given: Tree borers, scale insect, woolly aphis, bud worms, leaf crumplers, canker worms, codling moths, caterpillars, currant worms, striped beetles, flea beetles, peach-tree borers, curculio. All of these can be destroyed by the concentrated lye remedy on the body and limbs of the trees when dormant and by the addition to the Bordeaux mixture of arsenate of lead in the early spring sprayings. We would not advise using the arsenate of lead after the fruit has developed about one-third, as insects do not trouble fruit much after that. Use only the lime and bluestone (sulphate of copper) to keep disease in check, using it every two weeks.

The following is a list of insects that infest vegetables: Caterpillars, worms, potato beetle, slugs, hornworm. All of these can be destroyed by using arsenate of lead in the Bordeaux mixture; or when the Bordeaux mixture is not required, the poison (arsenate of lead) can be used alone in the proportion of one pound of poison to twenty-five gallons of water.

### MANURES, AND HOW TO APPLY THEM.

Manuring for the general improving of the land should be done in the fall and winter and plowed or forked in whenever the weather will permit; but when applied to the growing crops, it should be well rotted and not come in contact with the plants. It is best to run a furrow six or eight inches away from the rows. Place the manure therein and throw the soil back, thus keeping it damp that the plants may take up what is required.

For liquid manuring of plants, the material should be tied up in a coarse sack holding about one bushel of fresh cow manure or the cleanings from the henhouse where no lime has been mixed with it, as lime liberates a most essential quality (ammonia), therefore making it almost worthless. Place the sack of fertilizer in a fifty-gallon barrel and fill it full of water. Occasionally use a shovel to squeeze the sack against the side of the barrel, and in a few days the liquid will be ready for use. To every ten gallons of water add one gallon from the barrel, and to each plant give one pint, poured near, but not on it. Urine can be used in the same way, but should be used in the proportion of one gallon to about fifteen gallons of water. This latter is especially fine for onions, peppers, radishes, etc., and is highly recommended for all kinds of flowers, whether in the open ground or in pots. In the latter case the proportion should be one to twenty.

The commercial fertilizers are good for the purposes recommended; but those we have mentioned supply every need of the gardener, unless it should be that the land is deficient in phosphates and nitrates.

Common salt is an excellent fertilizer for several plants. Asparagus will flourish in soil so salty that hardly anything else will live in it, and is greatly improved by its use. Apply it in the fall or winter. Cabbage is also benefited by salt being liberally sprinkled on the land. If a pernicious weed gets established in the garden, chop it off below the surface and place a handful of salt thereon, and it will soon disappear.

## PLANTS AND FRUITS THAT HAVE A MARKED EFFECT ON THE HUMAN SYSTEM.

Asparagus is an excellent kidney medicine, and comes in early spring—at a time when the system often needs a course of renovation to free it of surplus accumulations. Therefore it is advisable to use the vegetable freely twice or even three times a day.

Horse-radish leaves bruised and applied to the forehead will often relieve headache.

Watermelon seeds boiled and used as a tea will often cause a free action of the kidneys.

Beets are a laxative, inclined to regulate the bowels. They contain much sugar, and are, therefore, a fat-producing food.

A raw beet scraped and applied to a boil will greatly relieve the pain and soon bring it to a head.

Carrots are a good skin tonic. In the case of stock that are fed on them, the skin becomes soft and healthy, with a fine luster on the hair.

Celery should be freely eaten at all times, as there is no better stomach nerve medicine in existence. The seeds of celery taken in teaspoonful doses three or four times a day will keep the nerves in a tranquil state and avoid headaches caused from indigestion.

Popcorn, when properly popped and freely eaten after meals, will very much aid digestion, and has the advantage of being a very palatable remedy.

Lettuce contains considerable opium; and when freely indulged in, it will produce a soothing effect in the nerve centers, with an inclination to sleep.

The onion is also a sleep producer when eaten raw, but with some persons the opposite effect is experienced when cooked.

Okra is mucilaginous, and by straining out the fibrous part can be freely used by persons who are convalescent from stomach or bowel troubles.

Cress is slightly tonic, as well as a laxative.

Parsley is strengthening to the kidneys, and can be freely used with a marked benefit either in suppression or in a too copious flow of urine. It can be eaten raw or used as a tea.

Rhubarb is a good laxative, acting freely on the bowels, with no tendency to injury.

Spinach is said to be a good liver, kidney, and bowel medicine, and can be had nearly the year round.

We do not know that the tomato has any medicinal properties, but we do know that there is nothing better than the fresh juice of the tomato to remove fruit stains from the hands.

The tomato is well supplied with sugar—more so in the juices surrounding the seeds than in the pulp, and on that account should be highly nutritious.

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## A LITTLE INFORMATION.

The following is a little information in regard to the proper choice of vegetables that will save a great deal of time and money when making purchases and vexation in the preparation of the same for the table:

If people would only use their eyes, nose, and the sense of touch, it would save them many dollars in a year in buying so-called "fresh" vegetables and fruits. There

is no economy in buying indifferent provisions if future doctor's bills are taken into consideration. Stale and slightly moldy food stuffs are without doubt unhealthy. With the recurrence of epidemics, such as cholera and yellow fever, the death rate proved to be more numerous among the cheaply and ill-fed populace than among the wealthy, who were able to have the very best the market afforded.

In consideration of the fact that Congress has passed laws to protect us against the manufacture of impure foods and drugs and the city fathers are striving to give us pure water, why should we not have a law unto ourselves in the purchase of commodities that do not come under the notice of the food inspector at all times?

In purchasing Irish potatoes, few people consider the flavor or economy in connection with the transaction. Any one who is posted knows very well that all red potatoes are strong-flavored and almost worthless to people of refined palate. The only reason for growing the early red sorts is that they mature a few days earlier, therefore bringing to the grower the very highest price. When a red potato has been exposed to the light for a few days, it takes on a green cast, and, as a consequence, is extremely bitter. One such potato, although carefully peeled to remove the green, may have enough of the acid in it to give the whole serving a bad flavor. Others of the early sorts are creamy white, with a pink mottle running through them, such as the Early Rose, which are finely flavored and of first quality. Another good sort has a creamy color on the order of the Crown Jewel, which is of excellent quality, cooking dry and mealy, like the Early Rose. Other varieties recommended are the Bovee, Early Puritan, and Beauty of Hebron—all well-known varieties.

In the interest of economy, never buy potatoes with deep eyes. You have to use the paring knife too freely when peeling them. If choice can be had, choose a smooth tuber, with flat or very shallow eyes.

In purchasing late potatoes, choose white or creamy ones on the order of the Burbank, which is one of the very best sorts. It has a good flavor and cooks dry and mealy. Carman and Peerless are also choice sorts.

In selecting green onions in early spring, question the dealer as to the variety. If he does not know, examine them for yourself. If the white or bleached part comes sharply up to the green top, it is likely to be a shallot, or scallion, and may be tough, as they are good only in the earliest part of the spring. If, on the other hand, they have dark-green stripes running from the green top down through the white part, they are likely to be silver-skin onions, and are mild, tender, and sweet.

If in search of a good, mild, mature or dry onion, be sure to select a light-brown or yellow color, and at the same time press firmly on the stem, and, bruising it a little, place it to the nose; and if it has a peculiar, moldy, offensive odor, do not buy, as it is diseased in the interior, one or more layers being rotten—a common trouble and hard to detect by sight or feeling, unless in very bad condition.

If you would have the best parsnip for family use, get the hollow-crown sugar parsnip. There is no doubt about the quality. They are long, smooth, and very rich in flavor. Those with rough skin and uneven in form are likely to have a brown, woody heart, and are worthless. Parsnip stew, like a few other dishes, is wonderfully improved by recooking. At the same time add a little butter and a pinch of sugar.

In selecting turnips, choose those with smooth skin,

showing a polished appearance. If the thumb nail cuts into it easily and it is firm, it is in good condition. On the other hand, if it is rough, it is likely that it is strong. Some of the best are purple-top, strap-leaf White Globe and red-top White Globe. Some of the Swedes or Ruta-bagas are much sweeter than the common turnip, but are mostly yellow in color when cooked.

To add to the flavor of turnips, grate a small carrot into the pot when placed on the fire, and to six large turnips add one teaspoonful of sugar.

In purchasing tomatoes for slicing, it is well to buy by name when possible. When buying from appearances, choose a large, very deep red, with thick flesh and few seeds. Such a sort is likely to be sweet or perhaps subacid. But the sweetest and most solid are purple or purplish red, with considerable green around the stem. Even the green is nicely flavored and very palatable. The latter sorts have few seeds, and sometimes are almost solid. A deep-red tomato called the "Crimson Cushion" and another by the name of "Stone" are both good.

Examine the tomatoes when buying. If there are dull, red, flat-looking spots on them, they are affected with tomato blight and are bitter.

When buying radishes in early spring, we would advise you to get the French Breakfast, White-Tipped Scarlet, or Early Scarlet. If people did not buy to please the eye, they would find that some of the white varieties of radish would be just as good or better than some of the red sorts.

For fall and winter use, the Chinese Rose, the Chinese White, and the Black Spanish are all good. With the exception of the Black Spanish, all radishes, to indicate quality, should be bright and smooth from leaf to tip of

root. When they get too old for use, they get rough and pethy.

Green okra in the market should be an even color all over, with no spots or bruises, and should not be cut over twelve hours to be in first-class order. The old type, the ribbed sort, should not be cut when over two inches long. When longer than that, it is likely to be tough. But the improved sort, known as the "White Velvet," is tender when as large as three or four inches. The latter sort is almost perfectly round and is equally as good.

In some sections farther North the people demand sugar corn, or six-weeks' corn, and will hardly take any other. In the Southern States sugar corn has its season in the early summer. After that we use red or yellow field corn, which is just as sweet as roasting ears, and we get more for the money. Red and yellow corn, when in the right condition for roasting ears, is white or cream-colored, and does not take on red or yellow until nearly ripe.

When selecting green corn for the table, strip the shuck halfway down the ear. Try the thumb on a grain or two. If the milk does not flow freely, it is too hard. After a little experience, you can tell by the pearly appearance of the grains that it is just in the right condition.

Bush or bunch snap beans are the earliest to mature, coming into market in early summer, and are in prime condition at that time; but later on the pole and corn-field beans are better and finer, being larger, sweeter, and just as tender. Snap beans of all sorts are subject to a blight, which forms black spots on the beans, placing them in rather bad condition in appearance; but it does not affect the taste and is not detrimental to health. The prevention of this disease is at the discretion of the gar-



dener, and he should be required to turn out clean stuff. Snap beans that are withered or bruised will not give satisfaction, and should be avoided.

Cucumbers for slicing for table use should be of a dark-green color and of a firm, unyielding nature when handled. This shows that they have not been cut from the vines very long and are in good order. If they have a white or light-green appearance, they are getting ripe, and are unfit for anything but seed. If it is possible to buy by name, call for White Spine, Early Frame, or Extra Early Prolific for early; Cumberland, Livingston, Evergreen, and Nichol's Medium Green for late. These are the favorites at the present time.

The cantaloupe is the hardest melon we know of to choose from for sweetness. Even the grower does not know that his melons are all sweet. In purchasing cantaloupes, the surest plan to follow would be to buy by name, choosing those with a very rough rind and showing just the least sign of a yellow mottling. Also notice that the stem had pulled off perfectly. If a portion of the stem adheres or has been cut off, the melon was harvested green and is tasteless.

If buying by name, you should choose Hackensack, Rocky Ford, Netted Gem, and Nutmeg. These are among the very best, and are generally sweet. When a cantaloupe turns yellow, it is worthless for anything but seed.

English peas that have been shipped are often of doubtful character. If examined closely, they will be found to be moldy, although a casual observer would declare them to be in good order. You may place them in your cellar, to be used a day later, only to find them in a very bad state that will induce you, very reluctantly, to throw them in the slop tub. Peas that have been

shipped by railway are often roughly handled, which bruises the hulls, rendering them unsightly. But they may be in perfect order in the interior. Break a pod or two for examination to make sure that they are in good condition.

In selecting sweet potatoes, as much care should be displayed as in the choice of the Irish potato. When possible, buy only by name, and not by looks, as in this case looks are deceptive. Call for Southern Queen, Nansamon Yellow, Yellow Yam, New Orleans Red, and Mississippi Yellow. These are known to be good and sweet. These are the varieties to parboil and arrange about "Billy 'Possum" when you are ready to bake him.

If celery is required simply for garnishing or otherwise decorating the dining table, there is none more suitable for the purpose than the variety known as White Plume. Being almost pure white, the leaves very much like a dainty white fern, it lends a most refined aspect to the surrounding arrangement. White Plume has little claim as a condiment. If flavor and good quality are required, we will name several that are good so as to aid the purchase of the best. These we mention are sweet, nutty, and tender when fresh. Call for either Golden Heart, Golden Dwarf, Giant Pascal, or Boston Market. From these you can choose both as to size and color.

The market gardener usually plants lettuce suitable to the season in which it is intended; but to aid the buyer in the selection of some particular variety, we will name a few for guidance. Call for Black-Seeded Simpson or Grand Rapids for winter; spring, and early summer; May King and California Butter Head for summer and autumn. About this time the Curled Endive comes more in favor for garnishing, and is used for salads sim-

ilar to some preparations of lettuce. There are several varieties of endive, but the kinds mostly in demand are French Moss Curled and White Curled. This plant is considered one of the best for salads.

In buying spring cabbage by weight, there is some certainty of getting the worth of your money. If bought offhand, it is well to feel the weight of a few heads, choosing those that appear to be the heaviest. If the heads feel soft upon pressure, they are hollow or have been cut too long and kept in a dry atmosphere, rendering them tough and unpalatable. Summer-grown cabbage are subject to blight. It is advisable to examine closely when purchasing. Examine each head of cabbage. If there are small, grayish spots scattered over the stems, resembling mildew, the interior may be badly decayed. The only way to decide the matter is to apply the nose or a knife. The mildew does not seem to be detrimental to the health of the person partaking of it after thoroughly cooking and does not seem to have any noticeable flavor.

Cauliflower often looks as if decayed through being shipped. This is a discredit to the packer, who, in striving to save on weight, spoiled the goods by not using enough soft packing material. By using the eye and nose it is an easy matter to determine the real condition.

When buying asparagus, get green tips. They do not look so nice, but are always tender and of the finest flavor. The white shoots look much nicer, but are more or less tough.

In buying canned vegetables of all kinds, examine both ends of the cans. If they are flat, the contents are likely to be good; if the ends are bulging, the contents are spoiled. Always empty the contents at once when open to avoid ptomaine poisoning.



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